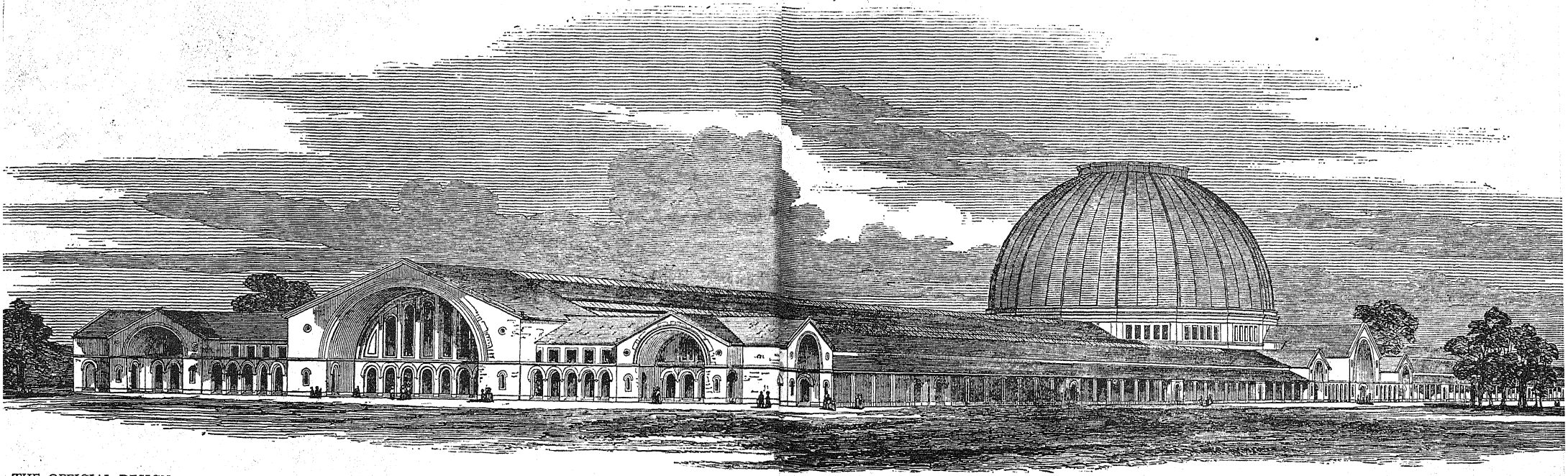
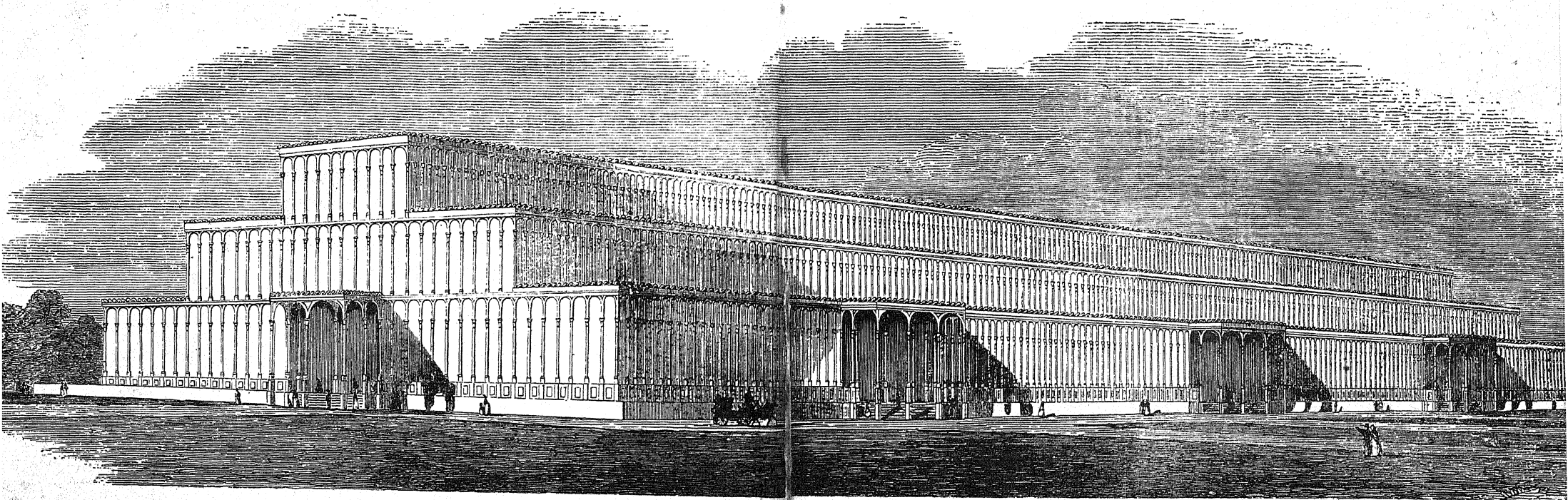
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THE OFFICIAL DESIGN.



PAXTON'S DESIGN.

PROPOSALS FOR THE EXHIBITION BUILDING

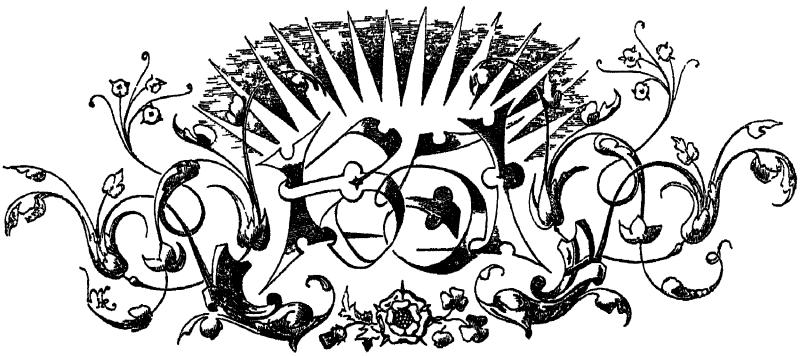
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1851
AND THE
CRYSTAL PALACE

being an account of the Great Exhibition and its contents; of Sir Joseph Paxton; and of the erection, the subsequent history and the destruction of his masterpiece

written by

CHRISTOPHER HOBHOUSE

and

fully illustrated from contemporary drawings



LONDON

JOHN MURRAY, ALBEMARLE STREET, W.

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To
Mary



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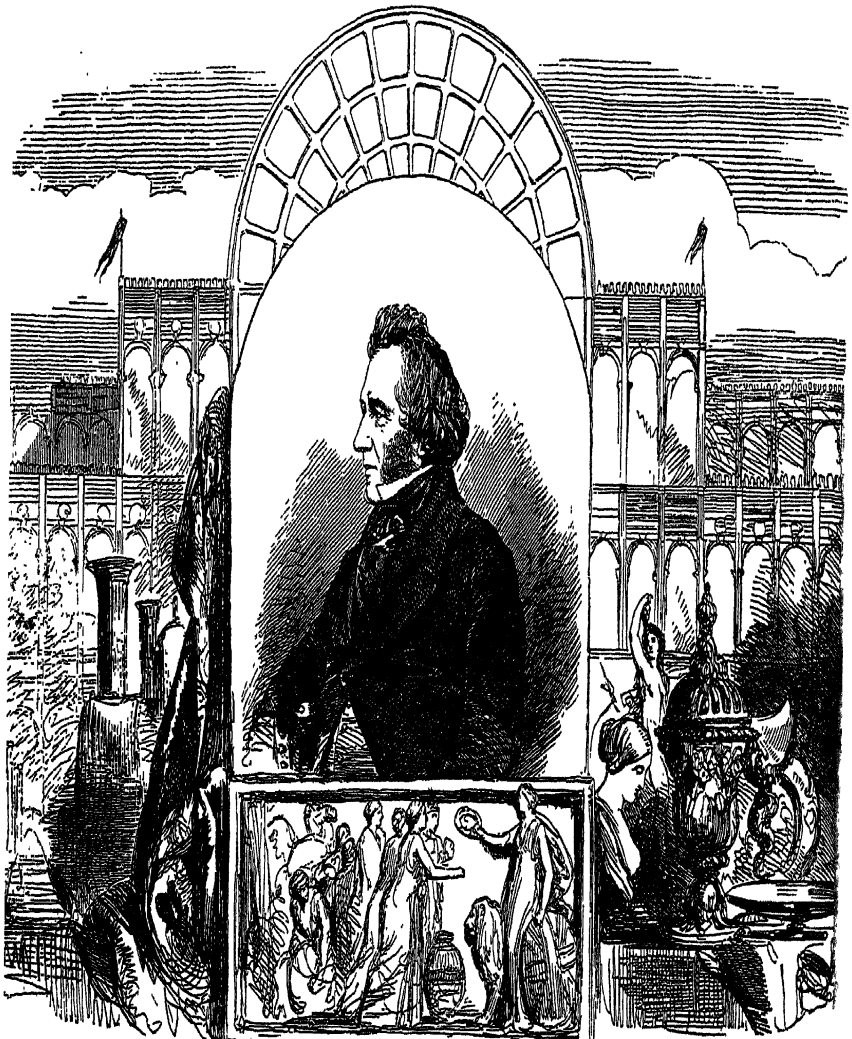
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JOSEPH PAXTON AND THE GREAT EXHIBITION.

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The Idea of the Exhibition

IN the year 1849, Prince Albert was a man of thirty years of age. He was the virtual ruler of the most envied country in the world; he had been nine years married to an adoring wife, by whom he had had five children: but nobody could have said he was a happy man, and few people reckoned him much of a success. His whole career had been planned with a view to his becoming the husband of the sovereign of England; nearly a third of his life had now been spent in England: yet between him and his adopted people a great gulf yawned. On both sides there were shortcomings. The Englishmen with whom he came in contact were never able to cast off their native insolence and self-sufficiency; Albert for his part was never able to acquire a particle of *savoir faire.*

To the end of his life, Prince Albert never understood the three qualities which more than any others make an Englishman acceptable to his fellows: he never acquired any humour, any manners, or any reticence. In Germany he had passed for a tremendous wag: on one occasion he had gone so far as to scatter stink-bombs from his box in the theatre, whilst his flow of puns was at all times unceasing. He was pained by the silence with which Cabinet Ministers were apt to greet the practical jokes that had elicited so much merriment at Bonn. His education had also taught him everything there was to know about Continental politeness, the essence of which is to be ill

at ease yourself, and to make everyone about you equally uneasy. It had not prepared him for the shock of his encounter with English manners: and spontaneity and self-confidence can only be learnt in youth. Moreover, he came to England too late in life to acquire that undemonstrative manner that so greatly adds to the ease of social intercourse. "Sentimentality," lamented Albert, "is a plant which cannot grow on English soil." He himself could not take leave of his brother without their joining in a last heart-rending duet: while his departure from Coburg, although it was in order to achieve the pinnacle of the family's ambition, had been the cause of enough tears to float a yacht. He expected that Englishmen, like Germans, would wear their hearts on their sleeves: soon he came to wonder whether they had any hearts at all. He was even tempted to doubt their intelligence. He had all the foreigner's passion for talking shop. He expected lawyers to discuss jurisprudence, soldiers to expatiate on strategy, divines to instruct him in theology. He was ready to meet them all on their own ground: but instead he was surprised and not a little shocked to find that all of them alike confined their conversation with him to the inescapable topics of hunting, shooting, and fishing. He never quite got rid of the idea that a man who doesn't talk about his work is bad at it. Nor did he give way to the manners of the country, and condescend to talk of trivialities himself. He was well enough qualified to do so: but sport was unimportant, and the purpose of conversation to Albert was edification.

Prince Albert was abundantly entitled to the designation of "Albert the Good": no man in the annals of English royalty has been more abundantly, more immaculately good. It puzzled him, as it puzzled Queen Victoria, that anyone could be at once so good and so little liked. But it is simple sycophancy to pretend that he was likeable. As a bishop, perhaps, his intellectual and moral gifts would have been

appreciated at their proper worth: but he was out of place as a royal saint. It is a part of the business of royalty in England to enjoy, or at least to pretend to enjoy the perquisites of great wealth and great position. The mean and circumscribed existence of the people as a whole gives them all the greater vicarious delight in the glamour, the romance, and the luxury that are imagined to surround the throne. Victoria, as a girl, had revelled in the rich trappings of Hanoverian royalty, and her people had revelled with her. But Albert did not fill the part at all. He never could accept, still less enjoy. He wished to know the Why of everything; he must eliminate the wasteful, spurn the reprehensible, encourage the worthy: he must reform, improve, progress. Everything to him was a subject for criticism, everything either good or bad. He could do nothing without question, because it had always been done. He must either do things better, or express his horror that they were ever done at all. All his actions were inspired by motives of the highest order: but not one of them was inspired by genuine, static, unmoral enjoyment. He honestly desired to brighten the lives of men: but in his exalted position, he made a bad start by breaking the spirit of a boisterous wife and by governing his children upon the principles of the Fairchild Family.

Altogether it was an inexplicable world in which he found himself. He could not hope to understand: so he set himself to improve. He despised and rather feared the society of which he should have been the head: he turned to the company that he preferred, the company of serious and successful men, of scientists and "savants." He patronised Societies for the Advancement of This and the Improvement of That. He revelled in Committees and Conferences: he pored over Reports and Memoranda: he presided over Conversaziones and Congresses. He became an inveterate believer in Progress, and

championed every progressive cause from education down to drains. In politics he never became a Liberal ; Peel was his hero, while he quarrelled violently with Palmerston : but any man of any party, who had the improvement and enlightenment of England at heart, could count on enlisting the boundless energy and earnestness and capability of the Prince Consort.

Prince Albert was an extremely well-educated man : he was able to take as keen an interest in science and invention and the fine arts as Charles the Second had enjoyed in the early days of the Royal Society. It is true that the results of his practical experiments were poor : his frescoes faded, his bridges gave way, his sewage system stank, and his architectural efforts would have been better left unbuilt. But no man was better qualified to patronise, direct, and inspire the efforts of the professional. It was Peel, himself a very competent judge of artistic merit, who first saw the Prince's possibilities, when he appointed him to preside over the Royal Commission which was to supervise the rebuilding of the Houses of Parliament after the fire of 1834. This was one of the Prince's first public appointments, and it was given to him at a time when the Queen was still inclined to keep him excluded from the responsibilities of State. He justified himself completely. All his industry, his knowledge, and his judgment were thrown into the great undertaking : and though the work can hardly be said to have been carried out with expedition, it gave us one of the most admirable of all public buildings.

Other appointments followed this first success. Royal Academy and Royal Society and a thousand lesser bodies, down to provincial Polytechnics and Philosophical clubs, came to look to the Prince Consort as their most reliable ally. One of the most valuable of these learned societies was the Society of Arts, of which he became president in 1847. The Society of Arts had been founded in 1753, and had

organised what was perhaps the first exhibition in England in 1756. Latterly it had fallen into inactivity; but in 1847 it took on a new lease of life. In that year the Prince Consort became President of the Society, and the Queen granted a Royal Charter. In the same year the Society held the first of three annual exhibitions of "Art Manufactures."

Exhibitions in themselves were nothing new. The Prince Consort as a boy must have attended many of the great trade fairs that are held in all the provincial centres of Germany. In Paris, for the last half-century, a quinquennial Industrial Exhibition had regularly taken place, and that of 1844 in particular had attracted numerous English visitors. Since 1829, the Royal Dublin Society had given a display of Irish agriculture, arts, and manufactures in every third year. In 1845, a great Bazaar of British manufactures was held in Covent Garden in aid of the funds of the Anti-Corn-Law League. In the same year, the Council of the Society of Arts, under the lead of Robert Stephenson, had put up a sum of money for an Exhibition of the Products of National Industry; but the manufacturers were "lukewarm—some of the most eminent even hostile to the proposition," and the project came to grief. At this stage, however, a gentleman appeared upon the scene who very soon changed all that.

Mr. Henry Cole was nothing more important than one of six assistant-keepers at the Record Office: but he was a man with a genius for getting things done. He was largely responsible for the erection of the present Record Office. He re-organised the Post Office. He edited innumerable periodicals. He was the friend of all the most illustrious middle-class thinkers of the day—of Mill, Grote, Buller and Chadwick. He was a painter and a musical critic. But his most important work was devoted to the improvement of industrial design. He edited an art-journal called *Felix Summerly's Home Treasury*,

and under the pen-name of Felix Summerly he wrote guide-books and pamphlets and catalogues of national collections which enjoyed an enormous popularity. In 1845, the Society of Arts offered a prize for a design for a tea-service : Cole won it, and the public bought thousands of sets of " Felix Summerly's service," manufactured by Minton of Stoke. The Society consulted Cole as to the best subjects in Decorative Art for the award of premiums : his advice was adopted, and Cole became a member of the Council of the Society. From that moment things began to move. In 1846, the Society sent a deputation to Prince Albert, who suitably enjoined them " to wed mechanical skill with high art." In 1847, the Prince became president and procured a Royal Charter. The first exhibition of Art Manufactures, in the same year, represented the most energetic attempt that had been made by any man since Josiah Wedgwood to introduce good design into everyday objects ; it was entirely the work of Cole, who rescued it from total failure by making it " a point of personal favour with a few great manufacturers to be permitted to select from their stores a sufficient number of articles to make a show." Their confidence in Cole was well rewarded : 20,000 people went to see the show : and next year, when the attendance was 70,000, the manufacturers needed no persuasion. The appetite for this new form of publicity was growing. In 1849, three important exhibitions were held. The third of the series organized by the Society of Arts was the most successful yet. The Prince Consort also patronized an even larger exhibition held at Birmingham under the auspices of the British Association. And it was the year of the eleventh quinquennial Exposition in Paris.

Cole was among the visitors to the Paris Exposition of 1849. Somehow or other he found a few days to pay a visit in June with Minton, the maker of his famous tea-service. At this time his hands

were full not merely with his many official duties, but also with the editorship of the *Journal of Design* and the preparation of an elaborate report upon the Government Schools of Design. Not merely was he the moving spirit of the current exhibition in London : he already had his plans laid for an Exhibition of Ancient and Mediæval Decorative Art in 1850 : and for 1851—his mind was already full when he went to Paris of yet more ambitious schemes for 1851. To begin with, the premises of the Society of Arts were too small : Cole sent a deputation to the Department of Woods and Forests, who promised them the use of the great courtyard at Somerset House. Government, unlike Royalty, had been unhelpful, particularly over the ineffective protection of copyright, which deterred many manufacturers from contributing their cherished designs and inventions : but Cole sent a deputation to the Board of Trade, and got them to promise every possible assistance. The idea at this stage was that the exhibition of 1851 should be the first of a series of Triennial Exhibitions of British Industry ; it was in this shape that Prince Albert gave it his blessing. Until Cole's visit to Paris, the notion of an *international* exhibition never entered anybody's head.

Cole was deeply impressed by the Paris Exposition. With his wide technical knowledge, he realised at once that in many departments of manufacture the Frenchmen had us beaten. Their taste, particularly in sculpture, was doubtful ; but their workmanship was admirable ; and in many departments, such as the manufacture of silk and all its varieties, they had scarcely any English rivals at all. What an excellent thing, Cole reflected, if English workmanship could be put side by side with French, for the emulation and instruction of both. Cole was a staunch free-trader, a close friend of Cobden's. It was three years since the repeal of the Corn Laws ; though it was to be another eleven years before the conclusion of the Anglo-French

Commercial Treaty. Already British trade had felt the benefits of the removal of many minor restrictions, and the whole current of opinion was moving in the direction of free commercial competition. People still cherished the dream of the Anti-Corn-Law League, that the rivalry of unrestricted commerce would supersede the rivalry of war. Exactly a year ago the streets of Paris had run with blood in the insurrection of 1848 : and here was all France united to display the arts of peace. How noble it would be to extend the hospitality of England to their whole collection, to proclaim that England was not afraid to face comparison with the best that France could produce. And why France only ? Here was also the produce of Algiers—olive oil and wheat and copper and tobacco and perfumes. What treasures England could bring over and display from the East Indies and the West. And America could exhibit her new-found wealth, and Russia her precious metals, and Austria her imperial resources. . . .

With these grandiose conceptions maturing in his mind, Mr. Henry Cole returned to London in the last days of June. His ideas were first communicated to a Mr. Scott Russell, who took the opportunity of the distribution of prizes after the Society of Art's Exhibition to announce that there was now every hope of carrying out His Royal Highness' plans for 1851. Mr. Scott Russell was immediately commanded to attend at Buckingham Palace to see the Prince, who plainly asked him what he meant by this pronouncement. He replied that the Society had got the site they wanted and had been promised the support of the Government ; and that further, Mr. Cole had returned from Paris convinced " that in this country such an Exhibition as he had witnessed would be far outstripped." Mr. Scott Russell did not yet broach the question of an international exhibition : this was left to Cole himself, who saw Prince Albert on the 27th. The Prince at this second interview " agreed that the Exhibition should

be a large one embracing foreign productions; and that a Royal Commission was expedient." On the 30th, Cole and Scott Russell again attended at Buckingham Palace, with a Mr. Fuller who was to provide £10,000 for the prizes; they met the Prince, who was with Mr. Cubitt, the President of the Institution of Civil Engineers.[1] The Prince "gave us his plan of a permanent building for the present", —whatever that might be; he put forward the excellent suggestion that it should be situated not at Somerset House but in Hyde Park, opposite the Knightsbridge Barracks; and he reiterated his opinion that "particular advantage to British industry might be derived from placing it in fair competition with that of other nations". The next day was a Sunday. Cole "walked out with Marian and children to look at the site in Hyde Park." Really, Mr. Cole was a man who thought of everything. In the evening he prepared a draft of the Royal Commission for the Prince.

From this time onwards, the great difficulty which had to be met was that if the promoters of the scheme were to use the name of Prince Albert, they must make absolutely certain of success. It was not possible to put forward a speculative venture under such august auspices. But it was hard to find backing. Cubitt estimated that the building would cost £50,000: £20,000 was suggested as the least possible fund for prizes: altogether the Prince thought that £100,000 would be required. He could hardly be expected to incur a personal liability for even a small part of that sum; and the Society of Arts had no funds. It was Mr. Fuller who found the solution: he got a firm of contractors called Messrs. Munday to agree to take all the risk and a share of the profits. Cole rushed down to Osborne twice to explain the proposals to Prince Albert—afterwards being given lunch with

[1] This was not the Mr. Cubitt who built Belgravia.

the equerries. He saw the President of the Board of Trade. He sounded *The Times*. He prepared innumerable minutes for the Society of Arts. He found that Fuller was not wholly disinterested, but hotly rejected the proposal that the contract might be worth £10,000 in his own pocket. He secured the insertion in the contract of a clause by which the Treasury might take over the whole of the contractor's part, and induced Messrs. Munday to consent to this very one-sided arrangement. The contract was finally concluded on October the 11th, but before that time Cole had already completed a far more laborious undertaking. He and Fuller were commissioned by the Prince to visit all the manufacturing districts and obtain the opinions, and if possible the support, of the principal industrialists. In the last week of August they went the round of Manchester, Liverpool, the cotton towns, the Potteries, Leeds, Sheffield, Bradford, Huddersfield, and hundreds of smaller places. On September the 3rd they journeyed to Balmoral to report progress. From there they visited Glasgow, and crossed to Belfast and Dublin. On September the 11th Cole was back in London for the first meeting of his Executive Committee. Two days later he was in Birmingham, and by the end of the month he had covered the South of England. Everywhere it was a triumphal progress : municipal authorities were flattered, and manufacturers as a whole were enthusiastic, with the exception of a few like J. Thomson of Clitheroe, who informed Cole that " a Calico Printer has no option between the *Gazette* and the Grave."

In October, Cole was busy drawing up a Report on his tour, with which to impress the Government. But the most important citadel was yet to be stormed. Cole carried out his propaganda in London in great style. He enlisted the support of the East India Company. He got the Lord Mayor to summon a meeting in the Egyptian Hall of the Mansion House on October the 7th. Hundreds of the more

important capitalists attended ; and Cole, " expressly deputed by the Prince to explain his views," delivered an effective account of the results of his tour and of the benefits that London might hope to derive from the enterprise : when he sat down the meeting was completely with him.

From the time of the City meeting until the end of the year, Cole's activity was prodigious. He obtained leave of absence from the Record Office, and procured himself a salary of £1,200 a year for his trouble. He paid continual visits to Windsor, where he gave Prince Albert his suggestions and received them back in the shape of commands. He danced attendance on editors and ministers. The Executive Committee held thirty-nine meetings. So complete was their success, so great the enthusiasm, that many people (particularly Cole) began to feel that the contract with Messrs. Munday was a mistake, and that the whole exhibition could be better run out of a fund provided by public subscriptions than as a private speculation. The clause by which the contract remained open to revocation operated only till the 1st of February. The Royal Commission, foreshadowed by Prince Albert six months earlier, was therefore hastily appointed : it met for the first time on January the 11th, 1850, and promptly denounced the contract. The £20,000 that had been paid by Messrs. Munday to the trustees of the Prize Fund was returned ; and Robert Stephenson was appointed arbitrator to decide on the compensation they deserved for the loss of what was beginning to seem a very good thing ; after hearing counsel on both sides, he awarded them the sum of £5,120.

The Royal Commission which thus took over the entire responsibility for the scheme sat under the Presidency of the Prince Consort. Among its members were the Prime Minister, Lord John Russell ; Peel, and his illustrious supporter Gladstone ; Richard Cobden ;

Charles Barry, the architect of the new Houses of Parliament; and William Cubitt, who had already been called in to advise the Prince as to the necessary building. Few of the twenty-four gentlemen originally gazetted to the Commission took more than a dilettante interest in the work in hand, and the real labour devolved upon Lord Granville, the Vice-President, a rising politician of thirty-five, who was then Paymaster of the Forces, and achieved the Foreign Secretaryship in the next year. Acting under the Commissioners, there was an Executive Committee, which was the same body as the executive committee of the Society of Arts. The chairman of this body was Robert Stephenson, the son of the inventor of the *Rocket*, and himself one of the greatest of all engineers. The members were Henry Cole; Charles Wentworth Dilke, who was a son of the critic and the father of the great Radical; George Drew, who was originally appointed as Munday's solicitor; and Francis Fuller, the gentleman who hoped to make something out of it. Scott Russell became secretary to the Commissioners; and Stephenson was soon succeeded in the chairmanship of the Committee by a Colonel Reid, the author of an authoritative treatise on Storms.

The first duties of the Royal Commission were to invite subscriptions and to procure the co-operation of local bodies. At this stage there was a considerable hitch. Nobody seemed particularly willing to head the subscription list. But soon a Mr. Samuel Morton Peto, the head of a firm of contractors who had constructed many of the early railway lines, came forward with a guarantee of £50,000. This broke the ice. Private guarantees soon mounted up to nearly a quarter of a million, and cash subscriptions followed in proportion. A second meeting of the City of London at the Mansion House produced £10,000; the City of Westminster followed suit with a meeting at Willis's Rooms, where the Bishop of Oxford delivered himself of a

noble speech on the Dignity of Labour ; and altogether, in the space of little more than a year, the sum of £79,224 13*s.* 4*d.* was collected. At the same time the Commissioners instructed the Executive Committee to circularize the mayors of every town in the United Kingdom with a view to the formation of local committees to decide upon the distribution of the available space. The Foreign Secretary was prevailed upon to communicate with the proper powers abroad, asking them to take similar steps to organize the adequate representation of their respective countries.

Another of the earliest decisions of the Commissioners was to withdraw the offer of prizes. Whether this step was due to an excess of financial nervousness, or whether (as the Commissioners claimed) to a universal opinion that industrial proficiency ought to be its own reward, it is not possible to say with certainty. At all events, it was a highly unpopular decision ; few of the exhibitors found much consolation in the choice of Gladstone and Macaulay to select a Latin inscription for their medals.

The admirable Granville also presided over the Finance Committee. It was anomalous, however, that the Royal Commissioners should have any finances at all, since the warrant of January the 3rd had only authorized them to " inquire into the expediency and merits of the scheme proposed by the Society of Arts." It was impossible for a mere Commission of Inquiry to incur legal relationships ; and the position from January to July was that the Society of Arts was incurring all the liabilities, while the Commissioners were accumulating the funds. In July it became necessary to contract for the erection of the exhibition building, and the Commission was made a legal entity by a Charter of Incorporation, which enabled " our most dearly beloved consort " and his colleagues to sue and be sued, implead and be impleaded like any other corporate body.

An almost equally essential preliminary to the launching of the exhibition was the consumption of a public dinner. On March the 21st, the Prince Consort honoured the Lord Mayor with his presence at the Mansion House. Before dinner he held a levée, at which more than a hundred mayors from all over the United Kingdom were presented to him The Egyptian Hall was decorated with coats of arms and bales of produce representative of the counties of England : at either end were transparencies of the genius of Britain and of the exhibition building, as it was then envisaged. Fortified by a stupendous repast, the Prince adjured the company to look forward to the realization of the unity of mankind, and declared that the Exhibition of 1851 was to give them " a living picture of the point of development at which mankind has arrived, and a new starting point from which all nations will be able to direct their future exertions." The Archbishop of Canterbury endorsed these sentiments : the French Ambassador spoke for the Diplomatic Corps in a few phrases which caused exquisite bewilderment among the provincial worthies. Lord John Russell, Lord Stanley, and Sir Robert Peel united their voices in a cause that had not yet assumed a political character. Finally, Lord Carlisle in a most graceful speech proposed the toast of " The Working-Men of the United Kingdom," to which unfortunately there was no one to reply. Later in the year, the Provincial Mayors invited the Lord Mayor of London and most of the Cabinet to a return banquet in the Guildhall at York, where the Prince Consort, after partaking of Soyer's hundred-guinea dish of turtles and ortolans, delivered a most admirable speech in praise of the memory of Peel, who had died in July.



The Problem of the Building

EVERYTHING pointed to the fact that 1851 was going to witness the biggest and best display the world had ever seen: but nobody as yet had given much serious thought to the question of how it was to be housed. The applications for floor space amounted to 400,000 square feet for English exhibits alone: it was clear that nearly a million square feet would be required in all, or nearly twenty times the area of either Westminster Abbey or St. Paul's. This problem was from the start somewhat too much for the Building Committee. Appointed in January 1850, the Building Committee consisted of the Duke of Buccleuch; Charles Barry, then at the height of his renown; Lord Ellesmere, for whom Barry had just completed Bridgewater House; Stephenson and Cubitt, who have already been mentioned; Mr. Donaldson, the emeritus Professor of Architecture at University College London; Charles Robert Cockerell of the Taylorian, who was at this time engaged in the completion of Elwes' St. George's Hall at Liverpool; and the great Isambard Kingdom Brunel.

After a month's deliberation, this powerful body reported that of all the practicable sites that had been suggested, by far the best was the large open space between Rotten Row and Kensington Road, immediately opposite to the entrance into Prince's Gate, the site originally suggested by Prince Albert in the previous year. This site comprised about twenty acres, easily drained, easy of access and com-

paratively bare of trees. Having settled this point, they invited the architects of the world to submit their plans within a space of three weeks. Two hundred and forty-five plans were submitted as a result by all sorts and conditions of men, from Mr. Crace, the fashionable decorator of Wigmore Street, down to " Sed quis custodiet custodes " and " Lady (A) with great diffidence submits this plan." The committee took a month to digest this mass of architectural ingenuity, and then presented a most curious report. They said that they were " penetrated with admiration and respect for these gratuitous and valuable contributions ", that they had learnt much from the good ones and even more from the bad ones, that they considered 68 of the plans to be worthy of honourable and favourable mention, and a further 18 (of which twelve were submitted by French architects) entitled to " further higher honorary distinction ". But, they said, there was among them all no single plan they could recommend for adoption. Accordingly, having been able to pick the brains of the unfortunate two hundred and forty-five, they had no diffidence in submitting herewith a plan that they had made themselves, for which tenders would be invited so soon as the working drawings were ready. The rest of the report consisted in an expatiation upon the incomparable merits of their own design.

The Building Committee can scarcely have expected a very cordial reception for the plan which was thus put forward, and immediately accepted by the Commissioners. Not only was their method of procedure of a very doubtful honesty : but the outcome of it all was a monstrosity.[1] The Committee included three of the most eminent

[1] The Building Committee's plan is reproduced upon the front end-paper. The only parallel to their procedure is to be found in that of the managers of Drury Lane, when they rejected *all* the addresses submitted for the re-opening in 1812, in favour of an indifferent composition by Lord Byron.

architects and the three most eminent engineers then living. It is safe to say that the architects had little to do with the design : Barry and Cockerell at any rate were far too busy. The real author was Brunel. Brunel was a varied genius. He designed the Great Eastern steamship ; he designed guns ; he built docks and railway stations ; he built the Clifton Suspension Bridge ; he built most of the bridges on the Great Western line. If ever a man knew how to handle great masses of masonry and iron with a sense of fitness, it was Brunel. But over his design for the exhibition building, he had come ignominiously to grief. The building resembled nothing so much as an early nineteenth-century Government House, all roof and verandah, entered by means of colossal false arches of horrible proportions. Perched upon this squat and monotonous shed, which was to be only sixty feet high, was a dome one hundred and fifty feet high and two hundred feet in diameter. This dome, the cherished masterpiece of Brunel, was to be made of sheet iron. Of all the wonders of industry on view, it was thought that none would be more wonderful than this. But it was certain that none could be more hideous : and the foundations necessary to support it would hardly be consistent with the public promises that had been given that the building was to be of a purely temporary character, and that the amenities of Hyde Park were only to be subjected to the most trifling disturbance possible. This erection was to be four times the length and twice the width of St. Paul's Cathedral : the dome was to be forty-five feet larger in diameter ; the number of bricks required was 15,000,000. Even if it could possibly be erected in nine months, it was going to cost almost as much to remove such a structure as to put it up, and it was doubtful if the materials would have any break-up value worth mentioning.

Yet all the many faults of the design could hardly account for the storm of derision and execration that greeted its publication.

For some little time a considerable body of opinion had been forming in opposition to the whole scheme of the exhibition ; hitherto it had been almost inarticulate, but it took this opportunity of giving vent to its diverse criticisms. As early as March, a distant rumble had been heard : Lord Brougham had stated in the House of Lords that he was afraid the British people were indeed about to make an " exhibition " of themselves ; he marvelled that English tradespeople were such fools as to subscribe their money to provide accommodation for the traders of all nations to come over and undersell them in their own market ; he also strenuously objected to the sacrifice of Hyde Park, which was one of the chief lungs of the Metropolis. But this was merely a characteristic bit of Brougham ; his warning went unheeded. He had himself been present at the enthusiastic meeting in Willis's Rooms : and in any case, there was little left in 1850 of the Brougham of the Reform Bill. Though he still sat on the Judicial Committee of the Privy Council, and maintained his old interest in the education of the workers, he had ceased to count politically as much more than a clown. Not even his apparent conversion to protectionism could evoke much surprise, for he had lately thought fit to oppose the repeal of the Navigation Acts.

In June, however, Brougham discovered that on this question of the exhibition he had sufficient allies to be able to cause a rumpus after his own heart. First and foremost among the opponents of the exhibition were the occupants of the houses that had recently been built along the Kensington Road facing Hyde Park and the Knightsbridge Barracks : they were supported by most of the inhabitants of Belgravia, who foresaw a ceaseless procession of unruly vagabonds passing in and out of Hyde Park by way of their select thoroughfares. Then there were a few religious objectors, who predicted that the finger of the Almighty would infallibly descend on so presumptuous

an enterprise. And there were the Radicals, who took pleasure in denying the right of the Crown to erect buildings in the Royal parks, invoking the provisions of 9 and 10 Geo. IV, c. 50, s. 25. But above all there were the Protectionists, an angry and powerful band. The country folk of England had indeed been a little forgotten amongst all the mayoral and municipal jollifications. The age was so obsessed with " steam intellect " and " railway intelligence," with Stephenson's bridges and Brunel's broad gauges, with all the perpetual improvement and invention that was revolutionizing the heavy industries, that agriculture had been relegated to the back of the picture. The country had survived the repeal of the Corn Laws, contrary to its own prediction : and with that settled, the country was easily forgotten. The exhibition in fact was so far a wholly urban enterprise, a positive triumph of coal and iron over corn and cattle. Protection was dying, and it seemed that it could never live again. But it was still capable of a pretty vigorous protest.

None the less, the Protectionists might have found many better spokesmen, though none more picturesque, than Colonel Charles de Laet Waldo Sibthorp, the member for Lincoln. Colonel Sibthorp had in his day presented a vigorous opposition to every Liberal measure that came before the House : he used to speak on every possible occasion, but whatever the subject of the debate, Free Trade was the Colonel's invariable theme. Political conceptions chased through his mind in glorious confusion : but in the end they all resolved themselves into so many aspects of England's downfall through Free Trade. And never yet had his country's impending doom seemed so demonstrable as when Colonel Sibthorp heard of the preparations for an exhibition of the industry of all nations. The country would be flooded with cheap foreign goods ; hordes of foreigners would come over here to sell their wares : thieves and anarchists would flock to

London from all over the world : secret societies were already being formed on the Continent to assassinate the Queen : worse still, there would be an influx of Papists, bringing with them idolatry, schism, bubonic plague and venereal disease. It was all too horrible to contemplate, and all the doing of that damned German Prince. The Colonel boiled over in a series of egregious outbursts in Parliament. Fifteen hundred foreigners, he said, had landed yesterday, and were even now surveying the ground : aliens were hiring houses in Kensington for the establishment of brothels : all the prisons of England would not be large enough to hold the ruffians who were coming over, and did the Government propose to build any more : a fellow had called upon him (Sibthorp) to subscribe to the thing, but it was " the greatest trash, the greatest fraud, the greatest imposition ever palmed upon the people of England " : the Park would have to be shut for two years—alternatively it would become a ploughed field, an armed camp, and the Serpentine an open sewer during that time : at this rate there would be hardly a tree left standing : a friend of his who paid £110 a year for a house in Prince's Gate was admiring a clump of elms one night as he undressed, and when he was shaving next morning he saw that the lot of them had gone.

There were many less ridiculous figures than Sibthorp who joined in the agitation : but most of these objected only to the choice of Hyde Park as a site. Mr. Bernal Osborne said that many of the inhabitants of Kensington were leaving the district, and that the builders of these new and expensive streets and squares were faced with ruin. Mr. Alcock said that the exhibition should be held in Battersea-Fields : true, they were flooded at times, but a permanent building there would stop the disgraceful goings-on on Sundays. Others suggested Regent's Park, Primrose Hill, even the Isle of Dogs. It was unfortunate that the Lord Chief Justice was the occupier of one of the new houses

by the Park : he presented the House of Lords with a petition from the inhabitants of Rutland Gate. Brougham supported him with immense virulence : the scheme was a gigantic and unbearable nuisance : he reminded the House of how Queen Caroline had asked Sir Robert Walpole what it would cost to rail in St. James's Park, and Walpole had replied—" Only three crowns ". The inhabitants of the neighbourhood took legal advice : but the Attorney-General refused to sanction the filing of an information for an injunction, an act which reminded Colonel Sibthorp of the worst excesses of tyranny.

It is strange to consider that one of the vital points of the whole opposition was the question of the trees. In those days a tree was not an excrescence to be cut down at sight : our grandfathers admired a living tree—the only thing that money cannot buy. When Colonel Sibthorp raised trouble about the cutting of the trees, he hit upon an argument worth all the rest. In point of fact, the site was almost bare—certainly far more so than any other part of Hyde Park. It is a site that has been used for generations by the cavalry from Knightsbridge Barracks, and on the whole twenty acres there were then about half a dozen grown elms and a clump of ten young ones, planted about twenty-five years previously. It was these latter that had caught the eye of Sibthorp's shaving friend. Nine of them had been cut down in all, and one stood, when the Colonel raised the matter in Parliament. The Attorney-General patiently explained that the Commissioners of Woods and Forests were the tenants of the Crown as well as the trustees for the public : that they could cut down ripe timber at any time, but that they required the sign manual before they cut down immature timber : that Hyde Park comprised 360 acres, and Kensington Gardens another 275, the whole being ornamented by many thousands of trees : that a thousand trees had lately been cut down in Kensington Gardens without a word of protest. Nevertheless,

the Commissioners of Woods and Forests stayed their hand. They left the tenth tree standing : indeed, it survived until quite a late stage of the proceedings. Although it was a miserable, straggling little tree, the contractors dared not touch it : they built religiously around it, making a hole in the floor for its bole and holes in the gallery of the Indian section for its rambling branches. The workmen, to whom it was an unmitigated nuisance, called it the Sibthorp Elm. It was not until January 1851 that Her Majesty's Government summoned up courage to remove it. The six full-grown elms survived for a more interesting fate : but to the end they were popularly known as the Trees of Liberty.

On top of all this hullaballoo, *The Times* began to thunder in its most portentous style about the awful consequences of holding the exhibition in Hyde Park. It was true that in the previous October, apparently at the instigation of Cole, *The Times* had stated that " the vacant space between Kensington drive and Rotten Row offers peculiar advantages," and had looked forward to the " brilliant and numerous assemblage " that Hyde Park would witness in 1851. But by July the tune was entirely changed. Hyde Park was " the worst of all possible sites " : the whole of the Park, yes, and the whole of Kensington Gardens too, would be turned into a bivouac of all the vagabonds of London so long as the Exhibition should continue : the whole place would be a bear-garden : Kensington and Belgravia would be uninhabitable : the season would be ruined.

Cole and his colleagues were too busy with the detailed spadework of the preparations to concern themselves much with all this ludicrous agitation. But to the Prince Consort it seemed as though the whole enterprise, with which his name was now irrevocably linked, were on the verge of a fiasco. The last and greatest of his efforts to improve and edify the British nation was to be spurned and ridiculed. The

Government were doing all they could to stand by him ; Lord John Russell spoke up in his defence, and Gladstone on the other side lent his support : but no government could be expected to risk much in such a cause ; and Peel, the Prince's truest and staunchest friend and much his most influential supporter in this matter, had died, as luck would have it, on July the 2nd. Writing to his brother Ernst, the Prince unburdened himself as usual of his most unfavourable impressions of his adopted people.

> Now our Exhibition is to be driven from London ; the Patrons who are afraid, the Radicals who want to show their power over the crown property, *The Times* whose solicitor bought a house near Hyde Park, are abusing and insulting. This evening the decision is to be made. Peel, who had undertaken the defence, is no more, so we shall probably be defeated and have to give up the whole Exhibition. You see we do not lie on a bed of roses.[1]

They were not defeated. Colonel Sibthorp's motion for a Select Committee was rejected by 166 votes to 46. But the appalling incubus of the building remained to mock their hopes. In a few days its erection must begin. But already the solution had been found. Peel, when he sustained the fall which caused his death, was riding away from a meeting of the Commissioners in New Palace Yard. At that meeting they had had before them some plans submitted by a Mr. Joseph Paxton—plans so bold and startling that the Commissioners scarcely knew what to think. Yet this was the miracle that was to save them.

[1] Hector Bolitho, *The Prince Consort and his Brother*, page 117.

Joseph Paxton

JOSEPH PAXTON[1] was perhaps the most characteristic, certainly one of the most admirable of all the products of the nineteenth century. He was born in 1803, a farmer's son. At the age of twenty he got a job as a gardener at the Horticultural Society's gardens at Chiswick. Here it was one of his duties to open the gate for the Duke of Devonshire, who liked occasionally to stroll across from his neighbouring villa of Chiswick. At times the Duke exchanged a few words with the young man, and found him extraordinarily intelligent: so intelligent, in fact, and so expert in his job, that he took him off to be head gardener at Chatsworth at the age of twenty-three. In charge of those splendid and lovely pleasure grounds, young Paxton soon began to work wonders. He levelled and drained and built and planted; he diverted streams, contrived waterfalls and fountains; he designed new greenhouses; he rescued old plantations and created new; he caused varieties to grow that never grew in England before. The glorious ash which weeps before the main entrance of Chatsworth to this day was brought from Derby fully grown: and it is said that the turnpikes had to be removed all along the route, so vast was the mass of soil that went with it. Paxton built the gigantic rockery. He built a fountain in honour of the

[1] Paxton has lately been the subject of an excellent biography, *Paxton and the Bachelor Duke*, by Miss Violet Markham, his grand-daughter. It will be obvious that I am much indebted to Miss Markham's work.

Emperor Nicolas which rose to 267 feet. He built the model village of Edensor. He sent expeditions to America and India in search of rare plants. He built orchid houses and pineta and an enormous Arboretum. He topped them all with the Great Conservatory, an acre in extent, which was considered by the Early Victorians to be almost one of the wonders of the world. One could drive a carriage through its vast expanse, while fern and palm and cedar waved amongst its girders.

One of Paxton's greatest triumphs at Chatsworth was the entertainment of Queen Victoria in 1843. On this occasion he excelled himself. River, waterfalls, fountains, gardens, conservatories were all illuminated with multi-coloured lights. The gardens were a fairy-land; the Great Conservatory became a fantastic firmament of lanterns. The Queen and Prince Albert were captivated; and the Duke of Wellington, who accompanied them, was moved to wondering admiration. But the Duke of Wellington, with his eye to commissariat, was always apt to wonder how things were done. In fact, he was determined to find out. He rose with the dawn in order to investigate the working of this wonderful display. And he found nothing. The gardens were as they had always been. The lanterns were gone; if any of the grass had been charred, it was returfed already; where last night a mass of people had been gathered to witness the show, not a trace remained. He sought out Paxton, and learnt that a swarm of men had worked all night to remove the wreckage. The Duke was delighted: "I should have liked that man of yours," he told the Duke of Devonshire, "for one of my generals." And the words were not lightly spoken.

Paxton by that time had risen far above the status of a head gardener, or even an agent. He was the Duke's guide, philosopher and friend. He travelled all over Europe with the Duke. He managed his affairs, which were always rocky. He managed Chats-

worth, Chiswick, Devonshire House, Bolton Abbey, Hardwick, and Lismore. From building greenhouses he had risen to building villages and bridges and reservoirs and gasworks. The Duke had large railway interests by virtue of his land : Paxton managed them. He became a director of many railways ; he opposed Railway Bills in Parliament and promoted others ; he made a packet in railway shares. He launched out still further, and started the *Daily News*, which saw the light in January 1846, under the calamitous editorship of Charles Dickens, and was rescued from an early death by Charles Dilke, the father of Cole's colleague on the Executive Committee of the Exhibition, and the author of the brilliant *Papers of a Critic.*

All this was a great deal to achieve from Paxton's little house in the Kitchen Garden at Chatsworth. He was living the life of a successful platform speaker—one night at Devonshire House, the next at Liverpool, the third in Derby for a Board Meeting, then to Chatsworth and his countless responsibilities there, and on to Lismore for a holiday of furious rebuilding and replanning. He became a public figure, a monument of self-help, a representative man of the steam age. Yet with all his wealth and success and importance, Paxton never ceased to be the perfect, the supreme gardener. Amidst all his amalgamations and manipulations, he still took delight in ripening the gentle banana at Chatsworth, or in coaxing some rare Indian tree to show its blossom among the limestone rocks of Derbyshire. He started the *Horticultural Register*, the *Magazine of Botany*, and the *Gardener's Chronicle* ; he published *Paxton's Flower Garden*, a *Pocket Botanical Dictionary*, a *Calendar of Gardening Operations* still in use, and a *Treatise on the Dahlia.* He gave his name to a well-known strawberry, and to many orchids.

By an edifying freak of chance, it was this continued attention to the horticulture of his early years that gave Paxton his chance of greatness. In 1837 an English traveller in British Guiana had been

refreshed by the sight of a water lily of a size and beauty that had been undreamed of. In 1846 the seeds of this plant had germinated at Kew, but three years had passed without a flower, or even much of a leaf. In August 1849 Paxton secured a plant for Chatsworth and built it a special heated tank, stirred by water-wheels of his own design. In three months' time it flowered. And how it flowered: eleven leaves of five foot diameter lay like rafts around the gigantic bud. Here was a plant expressly created to delight the Victorians. It was by far the largest thing of its kind, and it came from British Guiana, and industry and science and self-help had made it grow. It was named Victoria Regia; Paxton journeyed to Windsor to present the Queen herself with a bud and a leaf of the phenomenon. Droves of people came from all over England and beyond to gaze upon its stupendous growth.

It grew and grew and grew. No sooner had Paxton achieved his miracle than he was faced with the necessity of rehousing the exacting lily. And so he built his Lily-house, not nearly as large as the Great Conservatory, but a gracious and airy little structure of glass, not unlike the lily itself in its slender strength. One day Paxton had set his small daughter to stand on one of the lily's wide-spreading leaves, and it had borne her weight. Paxton had studied its construction; strong rusty ribs radiating outwards, held taut by the lightest of little green cross-ribs. It was a miracle of economy—so strong, so slight. Science perhaps some day would follow where nature led. Paxton at any rate was not behindhand. He built the Lily-house as delicately as his great engineering skill allowed. A glass ridge roof lay upon light wooden beams, hollowed out into gutters. Hollow iron columns upheld these beams and carried away the water from them. The very sashes held the edifice together. It was the lightest, the strongest, the most economical thing you could imagine.

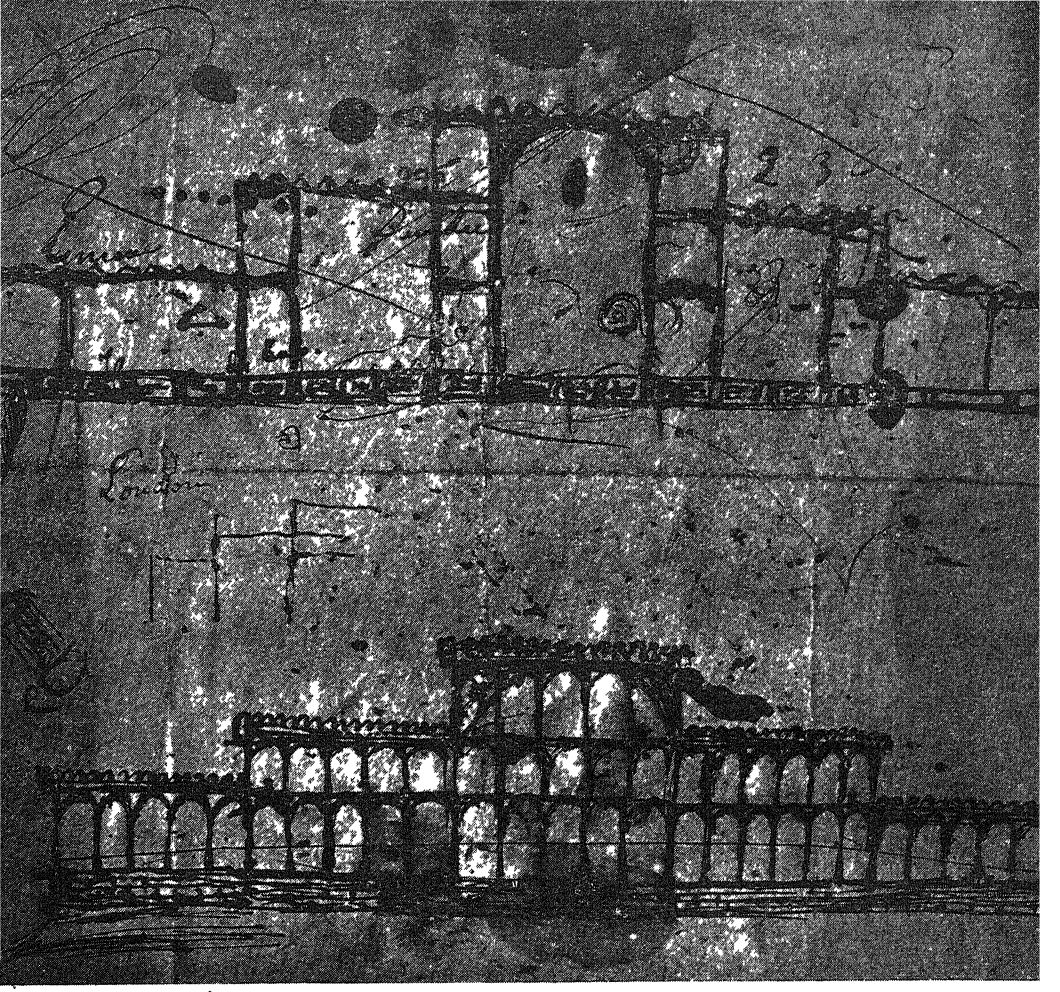
The Glass Palace

THE Chatsworth Lily-house was designed early on in 1850, and Paxton turned to other occupations.[1] But on the 11th of June, he chanced to be visiting the chairman of the Midland Railway, a Mr. Ellis, at the House of Commons, of which Paxton himself became a member shortly after. It was now sixteen years since the old Palace of Westminster had disappeared from history in a sheet of fire: already Barry's masterpiece had been ten years building. Fearful squabbles had marked its slow progress. There had been the squabble with Pugin, which was now patched up: and Pugin was once more slaving religiously away at the Gothic details that he loved, for a worldly Renaissance architect whom he detested. There was a further row about the ventilation, which was lamentable from the start: Barry had served a writ for defamation upon Dr. Reed, the contriver of the ventilation system. And now there was trouble about the acoustics. On the day in question, when Paxton went down to see his political friend, the House was meeting as an experiment in the new chamber, to test it for sound; member after member was pitting his lustiest eloquence against that cloud of cotton wool which enshrouds the interiors of our legislative and judicial edifices. Mr.

[1] One of which was the building and laying-out of Mentmore for Baron Meyer de Rothschild. Since the Crystal Palace has been burnt, and the Great Conservatory was blown up during the War, this great house remains his chief architectural monument.

Ellis remarked to Paxton on the variety and gravity of the errors that had been made in the design of the new building. Paxton agreed, and added that he was afraid that another blunder was going to be made over the building for the Industrial Exhibition next year. The plans were not yet published, but a man in Paxton's position would have learnt from his fellow-engineers what was in the air ; and being Paxton, he had not merely disapproved, he had considered methods of improvement. And he now told his friend Ellis that he had a notion in his head on the subject of the exhibition building, which he would be willing to put up to the authorities if it were not too late. Mr. Ellis fastened on to the idea with enthusiasm ; and as it was an early Friday sitting, he carried Paxton then and there off to the Board of Trade, where they found the omnipresent Mr. Henry Cole. Cole informed them that the specifications for tenders would be out in a fortnight, but suggested that a clause might be introduced to permit an alternative plan to be submitted with the tenders themselves. This was done, and it was in fact by this subterfuge that the Building Committee were able to save their faces, and reject their own design in favour of Paxton's.

Paxton never hesitated in a matter like this : he told the astonished Mr. Cole that if such a clause could be introduced into the invitation for tenders, he would go home and produce a finished plan in nine days. When it came to hard work, Mr. Cole was himself no great observer of the Lord's Day ; but Paxton's somewhat Nelsonian undertaking fairly took his breath away. Still, they were kindred spirits, and must have known and admired each other's achievements for some time past. Cole probably knew his man ; and there can be no doubt that he made up his mind from this moment that Paxton's plan, whatever it might be, would have to be thrust upon the Building Committee by hook or by crook.



JOSEPH PAXTON'S ORIGINAL DESIGN ON BLOTTING PAPER.

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Paxton left London at once : not for Chatsworth, but for North Wales, to fulfil an engagement to be present at the placing of the third tube of his friend Stephenson's Britannia Bridge over the Menai Straits. He was not back until the Tuesday, when he had to preside at Derby over a disciplinary committee of the Midland Railway. At this meeting he was seen to be busily scribbling on his blotting-paper. At the conclusion of the hearing, he held up before his colleagues not as they expected a note of the evidence, but a design for the Hyde Park building. The piece of blotting-paper, which is now in the South Kensington Museum, was marked with little hieroglyphics, numerals and railway routes ; and over them, boldly and crudely sketched, were a cross-section and elevation of a largish ferro-vitreous building. Round-headed glass bays in groups of five were stepped up to a three-storied nave with a semi-circular vault inside. A flat roof was surrounded with a frilly parapet. The cross-section did not tally with the elevation : but it displayed an arrangement of galleries almost exactly similar to that of the finished building.

Blotting-paper in hand, Paxton departed from Derby to Chatsworth. There, in the simple estate office where he had evolved his conservatories and reservoirs, he set to work to draw up his scale plans to the huge dimensions required. A Mr. Barlow of the Midland Railway helped him with questions of stresses and strains : otherwise the work was done by his ordinary everyday staff. The creative effort put forward by Paxton himself during the next week must have been something astounding. From the crude " notion " of the blotting-paper sketch, there evolved in seven days a completed and detailed design which differed only in inessential respects from the building that was actually erected. This rapidity of thought would have been less extraordinary if Paxton had been making use of a recognized style, or even of a recognized material. But he was not.

In the first place he was designing a building of glass—a material that was only just beginning to be used. Until Peel had abolished it in his budget of 1845, there had always been a heavy excise duty on glass. The glass buildings at Chatsworth were ducal extravagances : Paxton's employer could afford them, and he could afford to rebuild them if a gale or a hailstorm should destroy them. Apart from these, glass was no more regarded in 1850 as a building material than alabaster is to-day. Now Paxton was designing a building which was going to require a third of the entire glass-production of 1842. And it was not a building that could be simply altered or repaired as the occasion might arise ; it was a building that had got to house the treasures of the world and to shelter hundreds of thousands of visitors in comfort and safety. It had got to be built in nine months, and it had got to stand for six months ; it stood in fact for eighty-five years. Yet Paxton had none of the training of the professional engineer. He had no tables of expansion and contraction at his elbow, no graphs of breaking loads. But he had two great gifts, from his training as a gardener. He had an eye for beauty of form and line and proportion. And he had the instinct that only survives to-day among the older craftsmen and sailors, the instinct of knowing by the look of a thing whether it was going to work or no. Paxton knew by observation the weight of rainfall ; he knew by observation the expansion of an iron girder. He designed his great glass house by rule of thumb. It was a compound of experience and taste and sound judgment ; it owed nothing to theories or books.

Seven days and seven nights Paxton and his assistants worked on their enormous plans. Then he packed them up and caught the train at the new station at Rowsley, not far from Chatsworth, a station that he had got built. At Derby he was changing into the London train when he met his friend, the great Robert Stephenson, on the

platform. Paxton was highly excited, and told Stephenson that they must get a carriage to themselves, as he had a plan for the Exhibition building to show him. Stephenson was a little taken aback, and told Paxton that his plans were too late, and the whole thing was settled and decided. However, in they got together, and the plans were unrolled.

It must have been a rather striking scene inside that compartment. The two men were each of them forty-seven years old ; and it was just twenty years since the opening of the Manchester and Liverpool railway. In this railway-obsessed Victorian world, these two men were among the lords of creation. Stephenson had helped his father to design the old *Rocket* ; at the age of thirty he had built the main line to Birmingham ; he had built the high-level bridge at Newcastle and the tubular bridge at the Menai Straits, both of which are carrying the traffic of to-day. He was a member of Parliament, a member of the Royal Commission on the Great Exhibition. Paxton had travelled almost as far, from a humbler origin ; he had made almost as much money, and was on the threshold of almost as great a fame. And here they bowled along together in the locomotive carriage. Paxton sat eating out of a paper bag : Stephenson smoked a cigar in silence, while spread out before his expert and authoritative eye were the plans of Paxton's lovely and fantastic creation. " Admirable," he remarked, when at last he rolled the papers up : " they are the very thing, if they are not too late." He promised to use all his influence to secure their adoption.

Paxton's first action when he got to London was a very wise one. He went to see Lord Brougham, who not only liked the plans, but was glad of the opportunity they gave him of relinquishing his opposition to the exhibition, now that he found himself in such curious company as Sibthorp's. From this moment, Brougham turned round and enthusiastically supported the exhibition in general, and Paxton in particular.

The next day, Paxton went with Stephenson to interview Lord Granville,[1] who, as vice-president of the Commissioners, was making most of the important decisions. Granville was impressed, and he and Stephenson decided to put the plans before the Commission that very day. The Commissioners were impressed, but came to no final decision. Two days later, Paxton was summoned to the presence of the Prince Consort himself. He explained the principles of his plan at great length, and was satisfied that the Prince was on his side. Indeed, at this moment, when the last remnants of his English popularity looked like being buried beneath the Committee's monstrous brick building, the Prince would have listened to almost any alternative suggestion. If Paxton had come forward with a design for an exhibition building of cardboard, he would have found an attentive listener in Prince Albert : but coming as he did, as the architect of several successful glass buildings, some of which the Prince had admired with his own eyes, he appeared to the Prince in a very roseate light. Mr. Hector Bolitho makes Prince Albert dream of a crystal palace as early as July 1849 ; but in fact it was not until a year later that the idea of a glass building was put up to him at all, and then it swam into his ken less as a " dream ", than as a cork belt presents itself to the vision of a drowning mariner.

The Prince, however, had no power to dictate to the Commissioners. His own imagination was captured by Paxton's plan because it was the only alternative to the expense and odium and ridicule of the brick building. Glass, so far as the Prince was qualified to judge, was a pure gamble ; brick was a certain loser. But it was a different matter to persuade the Royal Commissioners—shrewd, experienced, cautious men—that they could entrust the safety of millions of people

[1] Granville, being a nephew of the Duke of Devonshire, must have known Paxton well—as Paxton's rivals did not fail to point out.

and of millions of pounds worth of exhibits to this light, fantastic structure. The Commissioners again considered the plans at a meeting on the 29th of June ; Sir Robert Peel—it was his last public act—attended the meeting, and warmly approved of Paxton's scheme. As a man of affairs, he could appreciate that the building would be cheap to erect, and that its materials were such as to fetch high prices when it should be demolished ; as a man of taste, he could admire its beauty. But how could even Peel consider himself entitled to adjudicate upon its structural stability, upon questions of wind-resistance, condensation, vibration and so forth? There was really nothing for the Commissioners to do but to refer the whole matter to the Building Committee.

The Building Committee, after all, existed for this very purpose ; they were there to arbitrate between all the designs that might be submitted. But they were now being asked to abandon a design of their own creation, the product of their exceedingly distinguished brains, the highest common factor of two hundred and forty-five rejected designs, a design for which tenders were already invited, a design which they had hotly defended for several weeks against an angry campaign of criticism and ridicule. They were being asked to reject it in favour of a design which any village carpenter would probably have pronounced to be impracticable at the first inspection. Little wonder that the Building Committee proved difficult. None of the three architects on the committee can have regarded Paxton as a serious competitor ; the two noblemen can have had little confidence in their decision ; and of the three engineers, only Stephenson was favourable. Cubitt was an old man, and as President of the Institution of Civil Engineers he personified the conservatism of all professional bodies. Brunel was younger than Paxton himself, and a bolder and more adventurous engineer never lived : but the official scheme, particularly the outrageous iron dome, was his own work,

and he could hardly be expected to hate it. But Brunel was a gentleman as well as a genius. One day, at a time when the decision was hanging in the balance, Paxton was asked what he intended to do about the trees : he told the Committee, with the authority of one who knew all there was to know about trees, that he could cover them in without any difficulty. Brunel asked him what their height was, and Paxton admitted that he did not know. Next morning Brunel rose early, went to Hyde Park and calculated the height of the trees, and called at Devonshire House to give the information to Paxton. " Although I mean to win with my own plan," he said, " I will give you all the information I can."

The Building Committee were fair enough : but still they hesitated between the safe monstrosity and the visionary ideal. Time was running short, and time meant everything to Paxton's success. So he took a rather drastic step. He appealed to the general public from the Building Committee—a bold thing to do when the matter was still so to speak *sub judice* before that expert and prejudiced body. The *Illustrated London News*, which then enjoyed a circulation of 200,000 copies, had published an engraving of the official design in its issue of June the 22nd, together with a somewhat bald description. Paxton saw his chance : the *Illustrated London News* of July the 6th came out with a reproduction of his design,[1] as it then stood. The comparison was invidious, to say the least. There was no great arched transept ; the entrances were by means of ungainly verandahs ; the long roof lines were entirely unbroken. But even in this bare and provisional state, the design was immeasurably superior to any other. In place of the squat and ponderous museum that Londoners had dreaded, they were offered a palace of light and pleasure, a winter garden, gay and lofty and impermanent. Together with the repro-

[1] Reproduced upon the front end-paper.

duction, there was a short but effective explanation of the merits of the proposal. It would be cheap and quick to build : it could be taken down in no time, and re-erected elsewhere. It contained no vestige of brick, stone or mortar. Everything could be pre-fabricated in enormous quantities : everything could be used again. There would be no interior walls ; the galleries would add twenty-five per cent to the available space. Finally, a truly Paxtonian touch,

> it is important to state that no timber trees need be cut down, as the glass would fit up to the boles of the trees, leaving the lower branches under the glass during the Exhibition : but Mr. Paxton does not recommend this course, as, for the sum of £250 he would engage to remove and replace every living tree on the ground, except the large old elms opposite to Prince's Gate.

The Building Committee regarded this indiscretion of Paxton's with not unnatural jealousy. But from this moment they were powerless : public opinion at once decided in favour of Paxton's plan, and to persist in the official scheme would have been to ensure the failure of the Exhibition, and to invite an adverse vote in Parliament. Popular opinion does not often interfere in matters that concern the expert : but when it does, it interferes decisively. London had refused to have the Building Committee's design even as a temporary measure : now it not merely demanded Paxton's design, but a few even suggested its retention as a permanent ornament to Hyde Park. Enthusiasm knew no bounds. The finishing touch was given to Paxton's popularity by his friend Douglas Jerrold, the leading spirit of the early staff of *Punch*. Paxton amongst other things was an adopted member of the *Punch* table, and his plan had the valuable support of that important organ, which had previously been joining with *The Times* in ridiculing the whole project. It was Douglas Jerrold who capped it all by

his invention of the name by which Paxton's building is still known. The Crystal Palace ! It was the finest " slogan " of all time. It turned the dull industrial exhibition into a Cockney fairy tale. The " industrious poor " were no longer to be edified : for once in a while they were to be entertained. They were scarcely permitted to kiss in the parks without a sermon or a fine ; but now a palace was to be built for them, full of rich stuffs and jewels and lordly ornaments, a paradise of crystal. Incredible as it might seem, Prince Albert's scheme was going to be fun.

Three weeks elapsed between the publication of the " Crystal Palace " design in the *Illustrated London News* and its formal adoption by the Commissioners. The Building Committee were not to be deflected from their procedure. The tenders based on the official design were due on July the 10th. Paxton was given to understand that, under the clause which Cole had inserted for him, he was at liberty to persuade a firm of contractors to submit a tender for his plan, as an " improvement " upon the official design. True, he had less than a week to do it in ; but this was his only way. As luck would have it, the country had of late been torn with dissension, on the question of Sunday postal deliveries. The Sabbatarians had succeeded in obtaining a temporary suspension of Sunday posts : and this was the very first Saturday in the history of the Post Office on which Paxton's letters would take two days to reach their destinations. But Wheatstone's electric telegraph already was running between most of the railway stations : and Paxton was able so to arrange matters that Monday morning saw the arrival at Euston of a number of sombre and successful friends of his. The chief of these were Mr. Fox and Mr. Henderson of Smethwick and Mr. Chance of Birmingham. The firm of Fox & Henderson were contractors, in whom Paxton had unbounded faith. Chance Brothers were the only glass manufacturers

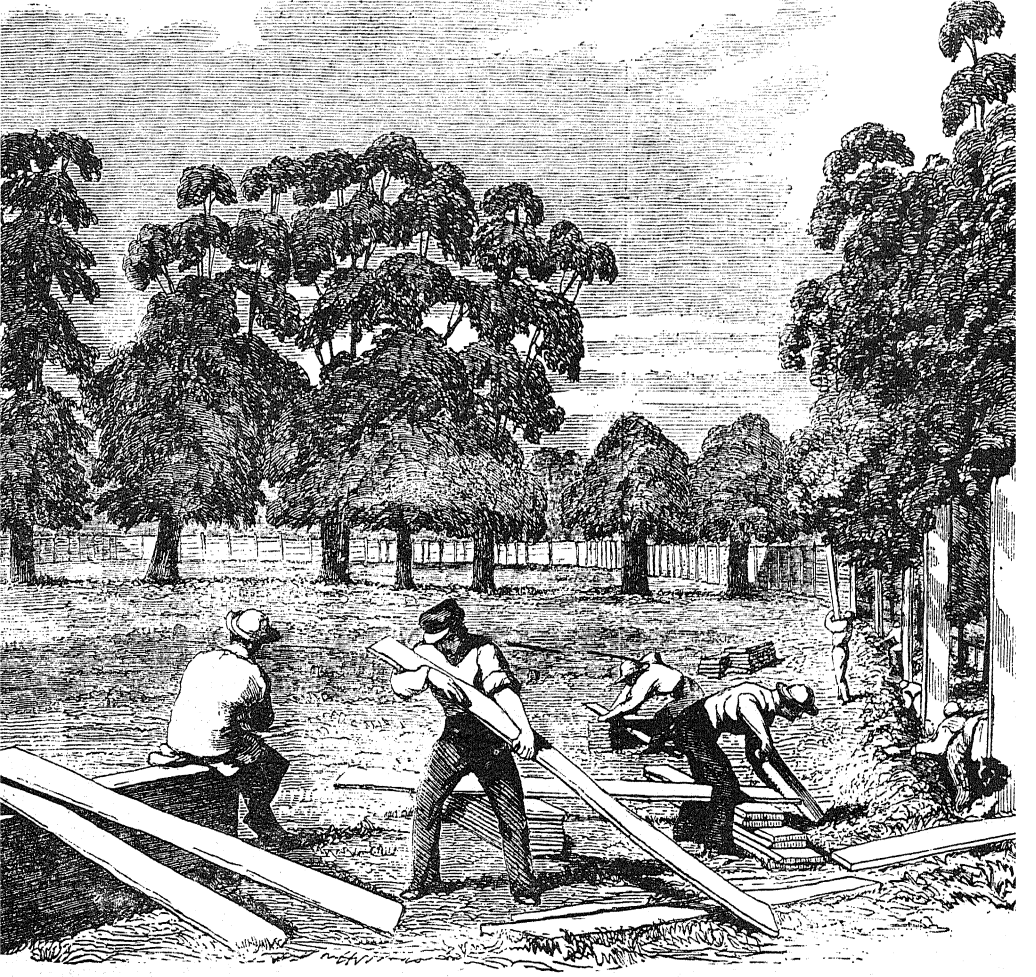
in England who were capable of producing anything like the quantity that Paxton was going to need.

These gentlemen now put their heads together at Fox & Henderson's office in Spring Gardens. For the next week they seldom left their desks and drawing-boards. From time to time they were joined by Henry Cole, whose determination to get Paxton's plan adopted outweighed his discretion as a member of the Executive Committee. He was able to ply them with inside information as to exactly what the Building Committee wanted, and how to appeal to their prejudices best. With his invaluable help, they managed by the end of the week to get two sets of estimates prepared. One was their tender for the Building Committee's official design : the other for Paxton's, which was humbly submitted therewith as a possible improvement. Among their calculations, they had reckoned that they would require 900,000 square feet of glass, in larger panes than had ever yet been made ; 3,300 iron columns ; 2,224 girders ; and 205 miles of sash-bars. The whole building, of 33,000,000 cubic feet, was tendered for at £150,000 ; but such was the nature of the materials that Fox & Henderson offered to erect the whole, if they could have the materials after, for the sum of £79,800. That is to say, the permanent building would cost a penny per cubic foot, and the temporary building just over a halfpenny. The use of such enormous quantities of standardized units naturally offered an exceptionally wide margin of error. It was a bold estimate ; and Mr. Fox has left a striking account of how one evening, when he found himself in Portland Place, he realized that he was undertaking a building of exactly the same length, three times as wide, and as high as the breadth of Portland Place. Yet his tender was the lowest but one of all submitted ; and what was almost equally important, his was the only building that could possibly be erected in the time, or that was at all likely to be removed after

the exhibition—a point on which public opinion was becoming clamorous.

Though the slightest error, where so much multiplication was involved, might have made the tender ruinous, there was nothing for it but to submit it on the appointed day, July the 10th. Having done so, Messrs. Fox & Henderson were yet to be subjected to two agonizing trials of faith. The Building Committee had in common sense no option but to accept their tender, and with it Paxton's design : but, they said, if they were to have a glass building, it might as well be made to cover in the trees. Would the contractors object to throwing in a gigantic arched transept [1] without any further charge? Fox and Henderson agreed to this ; and on July the 15th, the Committee advised the Commissioners to accept their tender. Mr. Fox was then asked to see Lord Granville, who explained that the Commissioners could sign no contract as they had no charter as yet. Would Messrs. Fox & Henderson agree to proceed with the building on the strength of Lord Granville's unauthorized word of honour, and without the prospect of any remuneration for several months? To this also they consented : the Royal Commissioners agreed to their tender on the 26th, and invited them to go ahead. They lost no time : on July the 30th they took possession of the site. For the next seven weeks, Mr. Fox was working eighteen hours a day, preparing the working drawings with his own skilful hands.

[1] Barry has often been credited with the conception of this arch : but Paxton has stated emphatically that the idea was his own.



Note. Illustrations in this chapter are reproduced by the kind permission of the "Illustrated London News."

The Palace Goes Up

MESSRS. FOX & HENDERSON undertook to complete their building by the 1st of January, 1851 ; they therefore had twenty-two weeks in which to enclose a space of eighteen acres. And their task was not made easier by a number of alterations at the eleventh hour. The chief of these, apart from the transept arch, was the addition of an extra gallery, running all round the outside wall of the second tier of the building, so that the " courts " in the side-aisles were overlooked on both sides. This addition brought the total length of gallery to one mile and three-quarters. The galleries added five acres in all to the eighteen acres of ground space.

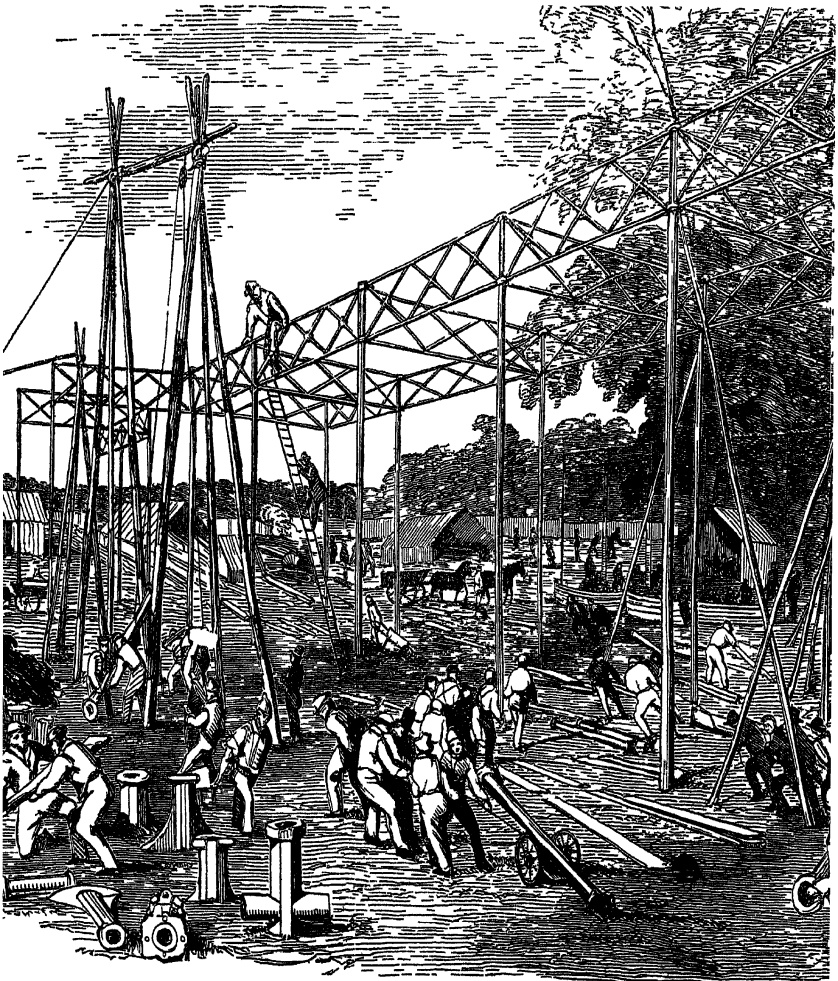
The first step was to erect a palisade of the timbers that were afterwards used for beams and floors. Then began the delicate work of levelling and setting out. During August, the foundations of concrete [1] were being laid, and the iron pipes, which were at once to hold together the bases of the columns and to carry away the rain-water

[1] For his concrete, Paxton used a mixture which he derived from an interesting source. When Rennie was making the foundations of Waterloo Bridge, he found the gravel bed was unaccountably hard in one particular spot. Inquiries revealed that a barge laden with lime had sunk there. Rennie told the discovery to Robert Smirke, who used it in his restoration of the Long Room of the Custom House, which had fallen in only ten years after Laing had built it.

from inside them, were put together. There were thirty-four miles of these pipes. It was not until September the 26th that the first upright column was put in place. Thereafter, owing to the extreme standardization of Paxton's method, the building went up at a marvellous speed, under the supervision of Mr. Cubitt, who acted for the Commissioners in all their dealings with the contractors

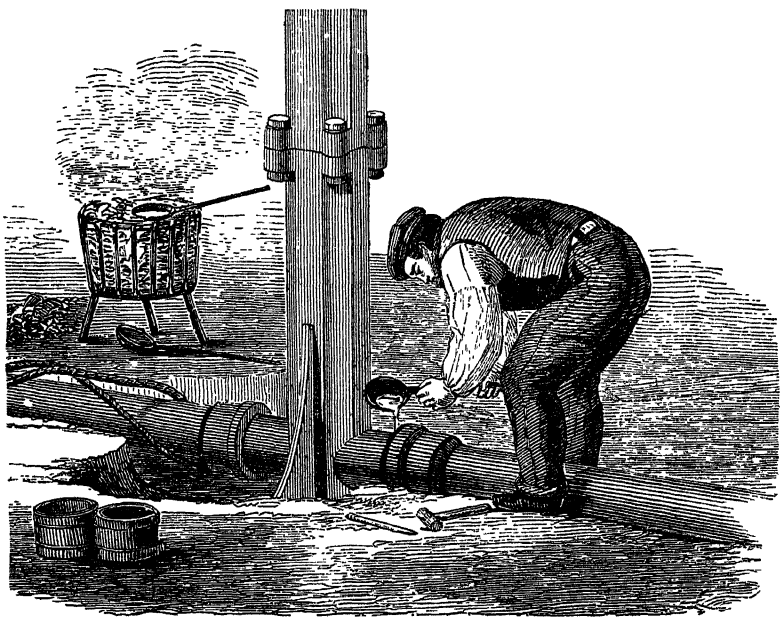
The erection of the columns began from the central transept outwards Each column was dropped into a " vase " or hollow socket, which connected it with the pipe in the base. There were 1,060 columns in each tier, at intervals of 24 feet each way. Their heads were firmly joined by light cross-ribbed girders three feet in depth, each girder being separately tested before erection on Bramah's hydraulic press to bear a weight of fifteen tons. Pickford's vans plied busily to and fro from Euston to Hyde Park, delivering fifty girders a day and tons of columns ; Paxton witnessed the erection of three columns and two girders in sixteen minutes It was the first great demonstration of the possibilities of mass-production. The building rose just as fast as the columns could be cast : there was no waiting on weather or on the drying of mortar. By the end of October, when the contract was signed, Messrs. Fox & Henderson had already incurred an expense of £50,000, at their own risk.

The Crystal Palace now became one of the sights of London, and the pride of the neighbouring residents who before had been so much alarmed. What could be pleasanter than to go out into the Park of an afternoon, and watch how the fantastic tracery arose so fast and so high among the falling leaves and the watery skies of November ? Paxton of course was constantly there : Fox was on the site for fourteen hours a day. Prince Albert came regularly, and occasionally brought the Queen. Wellington became addicted to visiting the ever-changing scene : " I knew it would be all right," he



told Paxton, " as soon as I heard you had got it." The Duke of Devonshire took the greatest pride in his gardener's handiwork. And troops of " high-born dames ", as the newspapers called them, were to be seen picking their way among piles of timber and cart-loads of sheet glass. What with the Sibthorp elm, which still raised

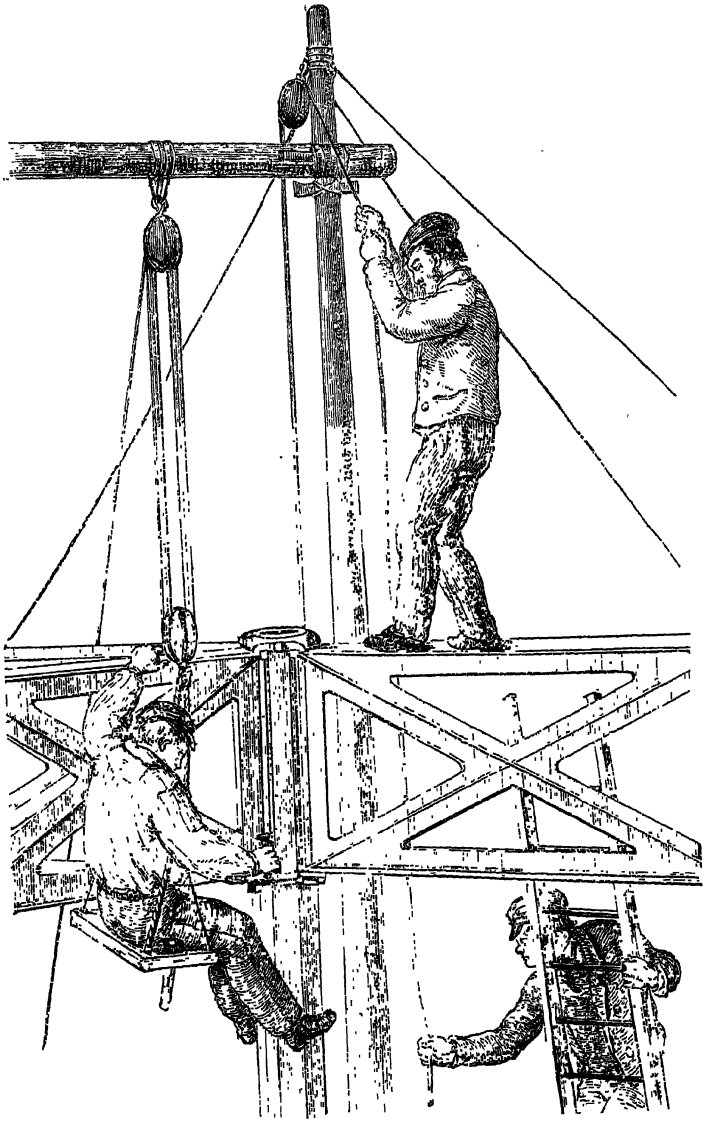
its unshapely head, and the ceaseless stream of visitors, the workmen found it no easy task to keep pace with the materials as they arrived. The contractors instituted a charge of five shillings for admission, from which they formed an accident fund. But even so, over two



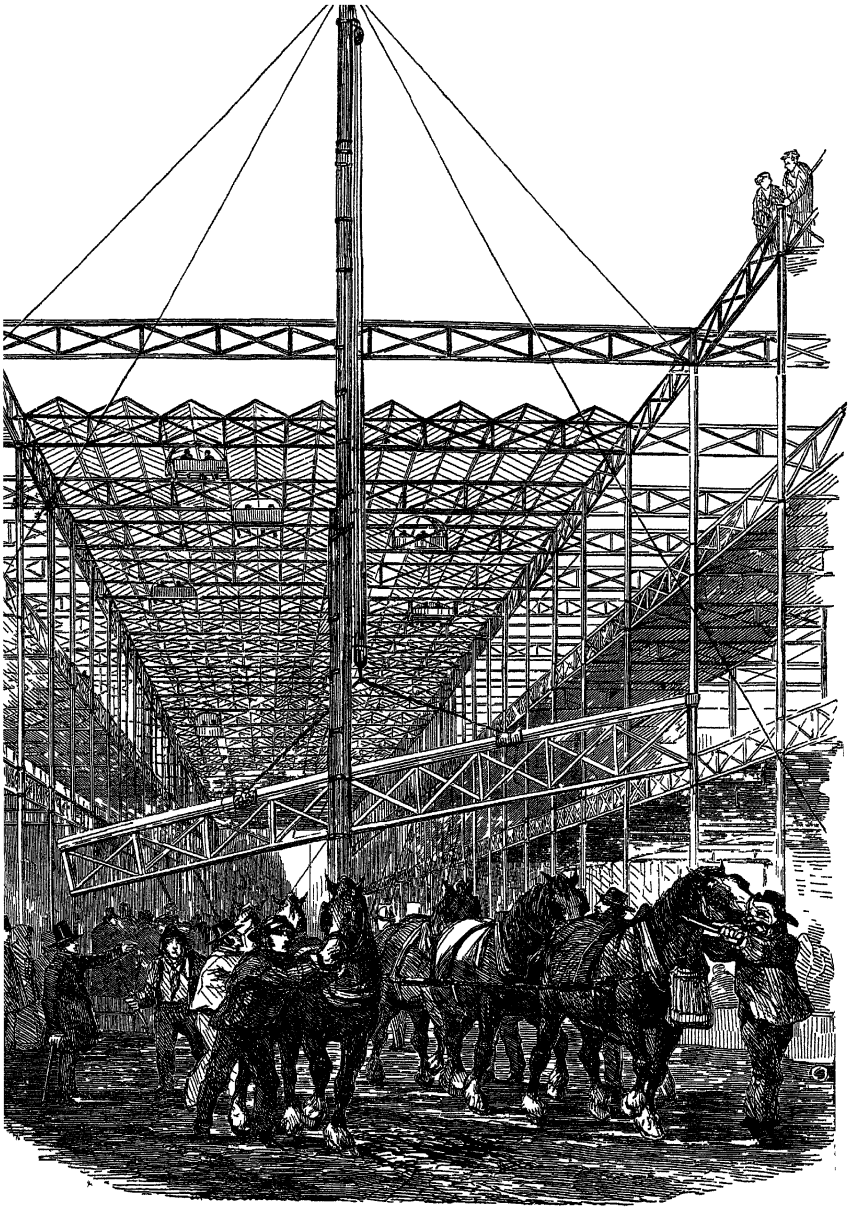
Base of Column.

hundred visitors a day continued to come in to wander round the amazing scene of industry and skill and beauty ; and the newspapers reported progress more keenly even than they lately reported the progress of the *Queen Mary*.

Towards the beginning of December the roof was going up. Along and across the topmost girders, at intervals of eight feet, were

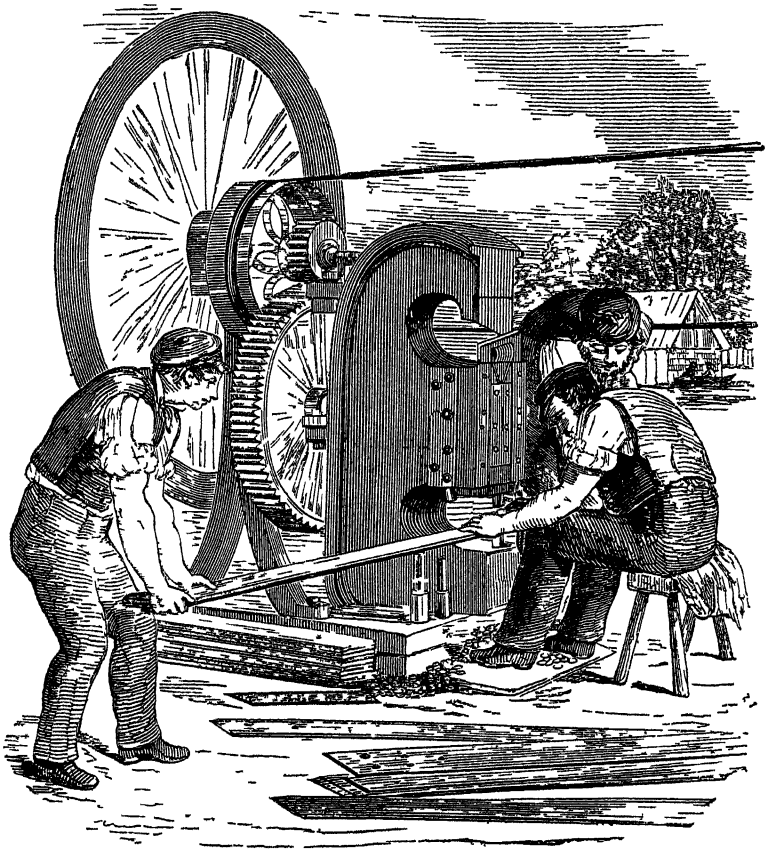


Head of a Column.



Raising Girders of the Central Aisle.

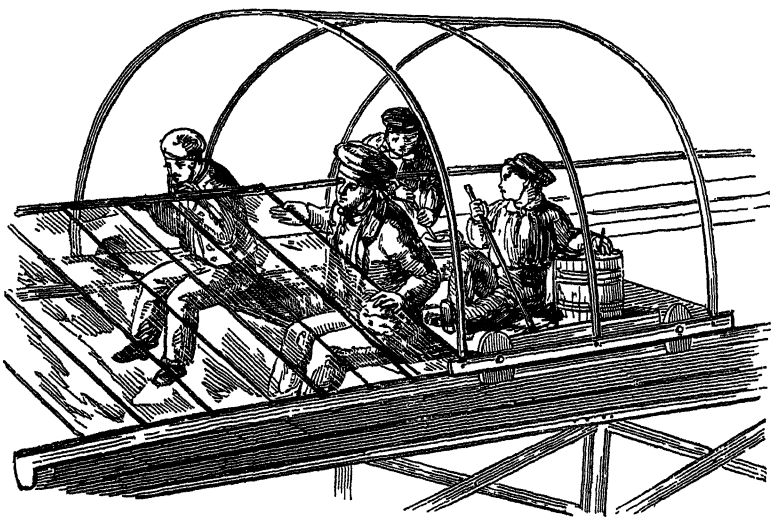
laid the "Paxton gutters". These were solid beams of wood, into which three grooves were cut by a special machine for which Paxton



Punching Machine.

had received the medal of the Society of Arts in 1841. A deep groove in the top of the beam received the rain-water from the glass panes, which rested on its edge. Smaller grooves on either side caught the

steady drip of condensation which was going to be formed on the under-side of the glass by the exhalation of thousands of visitors. Both these grooves carried their streams of water into the hollow vertical columns, which in turn conveyed it to the underground pipes. The glass panes which rested on these gutters were of the largest size yet manufactured, and the means of doing so had only

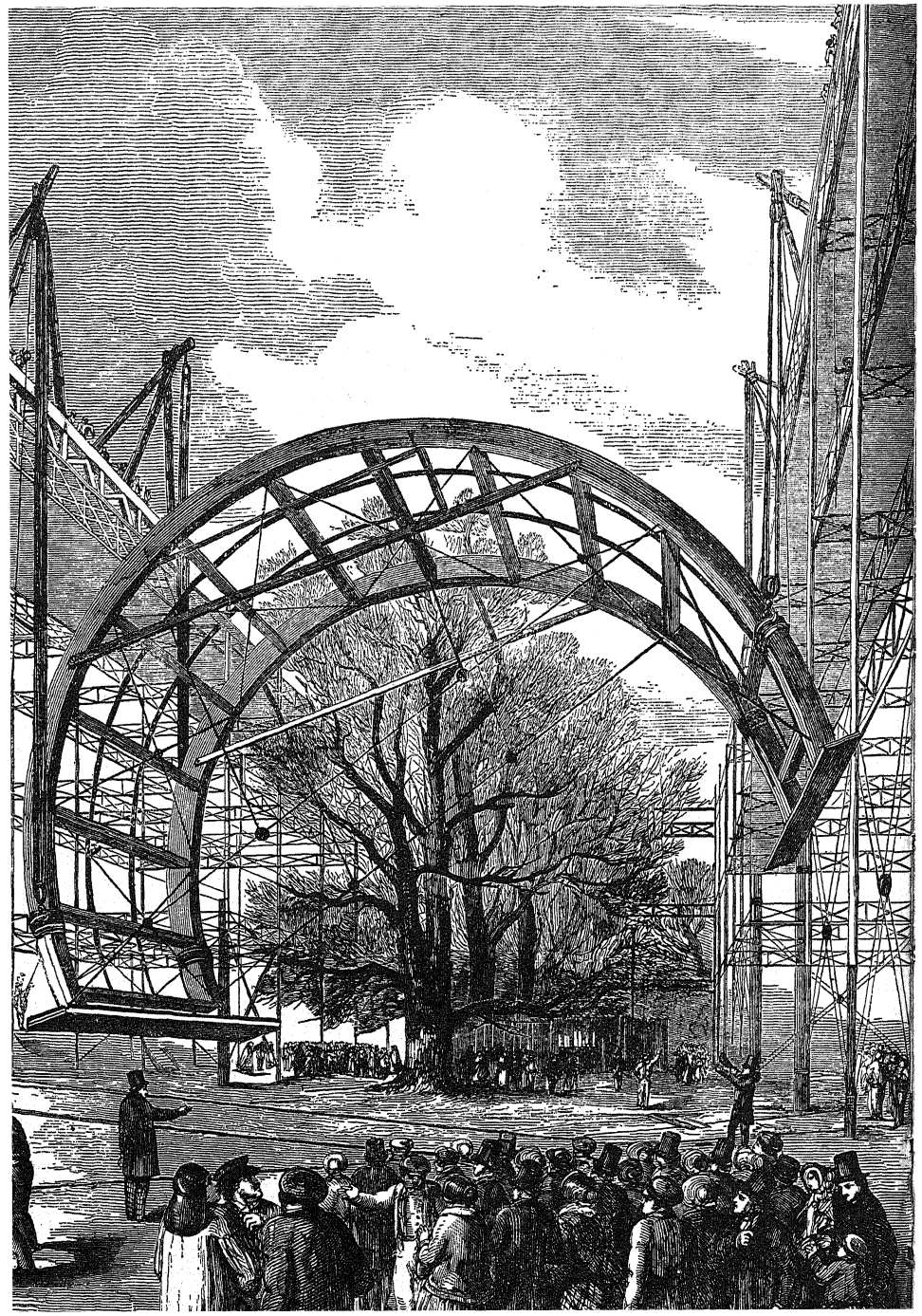


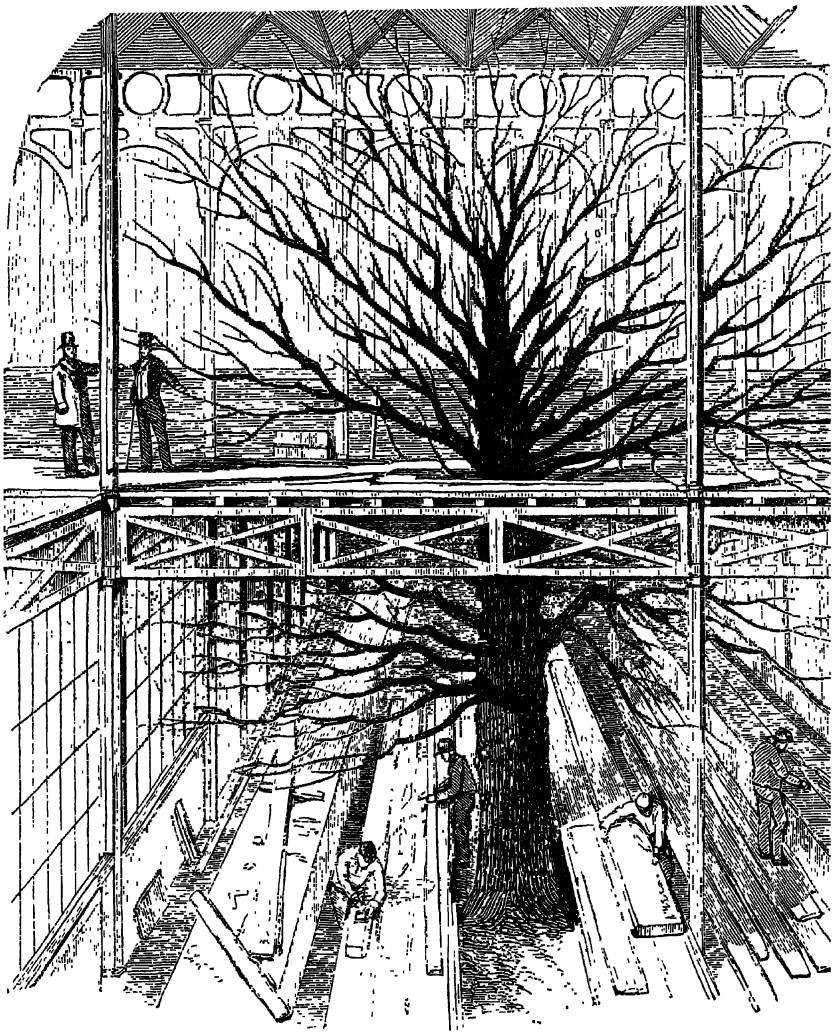
Glazing Waggon.

lately been discovered, as a result of Paxton's insistence that he would not use overlapping panes in the Great Conservatory at Chatsworth. The glass now used was forty-nine inches by twelve ; Chance Brothers supplied the whole 300,000 panes in a few weeks. The glass was inserted by means of a picturesque device—a trolley, the wheels of which ran in the " Paxton gutters." It was pulled backwards as the work progressed, and, being covered, enabled the job to continue in all weathers. These glazing waggons were a curious

spectacle, as seen from the highest girders : they crept busily about, dozens of them, huddled shapes in the slanting November sunlight, each carrying a crew of two men and two boys along at a frightening height. There was a strike of glaziers about piece-work rates, which was firmly dealt with. Otherwise the men, who had now risen in numbers from thirty to above two thousand, worked with a will. Every day they put up as much glass and iron as goes to the building of a good-sized railway station. And in the evenings they worked long after dark ; they gathered together the piles of shavings from the various workshops, and the fallen leaves from the trees of liberty, and lit great bonfires in the nave, which sent their flickering glare up and down the huge skeleton, gleaming on the patches of glass and glowing down the endless network of girders.

Every day the scene took on a new and more beautiful shape ; and every day the Londoners became more inquisitive and more proud about their glorious new landmark. There is no fun like building ; but this building was visibly greater in the evening than in the morning of each day. By December a start had been made on the flooring, which was the same as Paxton had hit upon for his conservatory, namely, nine-inch boards at half-inch intervals. The louvre shutters, which were to keep the interior even cooler than the external temperature, were going up along the base. Mr. Owen Jones was busily experimenting with the best form of decorative painting, which was to constitute one of the greatest beauties of the finished building. And on the 5th of December, the first of the sixteen great semi-circular ribs of the transept was raised into position by a gang of " long-shore-men." These arches were of wood ; they rose to a height of 108 feet ; owing to the situation of the trees, they were two bays aside from the dead centre of the building. On the same day, the Commissioners held their first meeting in the

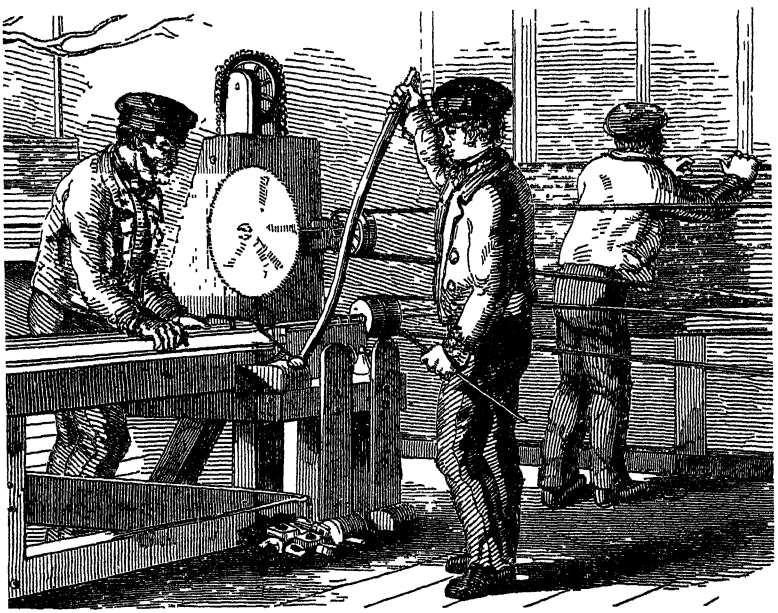




The Sibthorp Elm.

building, instead of in New Palace Yard as hitherto : Prince Albert attended, and witnessed the raising of the arch. " After his Royal

Highness's minute inspection of the whole of the structure, the carriage drew up for his departure. Just then a brewers' dray, laden with 250 gallons of beer, entered the gates, and was received with loud cheers . . . to the manifest pleasure of the Prince who repeatedly acknowledged them." Casting his mind back to the dark days of



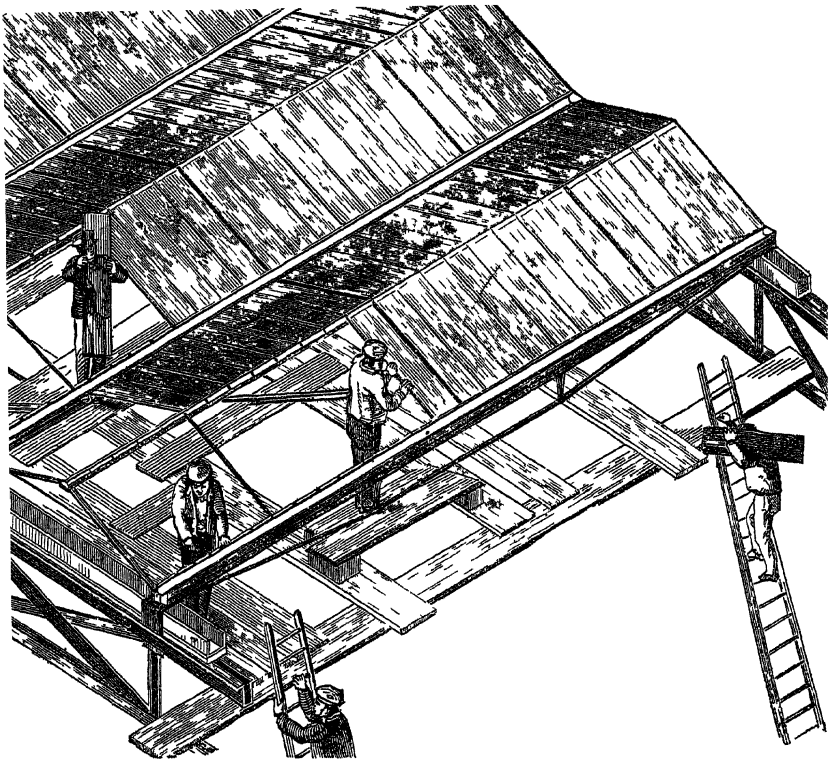
The Sash-bar Finishing Machine.

July, he may well have been proud of the scene that met his eyes, dominated now by the tracery which foreshadowed his "sunny pleasure dome with caves of ice."

Perhaps not exactly *ice*. Colonel Sibthorp was of the opinion that the place was going to be infernally hot, positively a furnace. Anybody who possessed a hothouse could have told the Prince that

hothouses were hot; the Colonel spoke with authority, as the possessor of a famous garden. Hothouses also dripped with condensed vapour, always; this one was going to be deluged with it; the goods were going to be saturated. Then again the refraction of the sun's rays from so many panes of glass could not fail to ignite the contents of the building; and a fire once started could never be put out, as the cracking of the glass would admit a furious draught. If the building lasted till next summer it would be a positive death-trap; but the question scarcely arose, as it was impossible for it to stand till May. Had the precious Mr. Paxton considered the force of a strong wind on all his glass? Or the weight of nineteen acres of snow? And any Lincolnshire farmer could have told him a thing or two about the effects of hailstorms on glass. Crystal Palace, indeed; it was a sieve, an oven, a lightning-conductor, a house of cards. Or if it did stand, it was a tower of Babel, a cave of Adullam, and a hotbed of Popery. The papers said that Augustus Welby Pugin, the most dangerous of Mariolaters, had a finger in it: he had taken a large space, and was actually building a Romish chapel on the soil of Hyde Park. Thank God the trees were still there—about the only British products that were going to be allowed inside.

But the voice of Sibthorp was now only a voice crying in the wilderness. The country had gone mad about Paxton, and Paxton's word was law. In his own Derbyshire, they greeted him with church bells and bonfires; in London, they treated him to a series of public dinners that would have taxed the endurance of a royal duke. When Paxton said that the Crystal Palace would stand in any wind, he was believed. True, there were one or two miscarriages. A mysterious freak of wind on one occasion lifted several panes of glass out of their sashes. Another time the water was found pouring through the roof; but this proved to be the doing of a dissatisfied



glazier, who had jammed a quantity of sacking into the outlet of the Paxton gutter. Otherwise the building was perfectly watertight, though it required nerve to prophesy that it would be. As for the heat, Paxton contrived a calico awning which could be drawn across the whole of the flat roof; he pointed out that every third upright compartment and the whole of the basement was to be filled with movable louvre shuttering; he even offered to instal punkahs

Everything that Paxton said came true. January brought a furious gale of wind, before the roof was finished; not a tremor

was felt.[1] The next day saw a violent hailstorm; not a pane was broken In consequence of some fears that had been expressed about the lightness of the gallery girders, they were strenuously tried out in the presence of the Queen, the Prince, and all their children Three hundred of the workmen were made to jump up and down on portions of the gallery for several minutes; a corps of Sappers marched, doubled, and marked time on them; trolleys of cannon-balls were trundled to and fro; and Mr Fox finally volunteered to run a railway locomotive along them To avert the danger of fire, Paxton installed twenty-five engines, and arranged with the Chelsea water-works for the supply of a seventy-foot column of water To minimize the temptation offered to small boys, he surrounded the entire building with a six-foot iron railing, behind which a body of police were stationed. He patiently explained that he had foreseen and made provision for the condensation of vapour, and published a letter from a gentleman in Derbyshire for whom he had built a flat-roofed conservatory, who stated that he kept his books, pictures, *and piano* in it because it was the driest part of the house In fact, Paxton was equal to all occasions Everything went off like the campaign of a Marlborough, because he had foreseen everything The Duke of Devonshire, whose admiration had now developed into hero-worship, records that Paxton is still "the quite unaltered gardener"; but to the public he presented every trait that could stir the Victorian age to praise Confident yet modest, safe yet daring, industrious, versatile, self-educated and self-enriched; for a few months he almost shared the popularity of Wellington. He was bombarded with suggestions for glass buildings of all sorts and kinds:

[1] One of the principal prophets of disaster was the Astronomer Royal On the other hand, Colonel Reid, the authority on Storms, estimated the gale to be a sixth of what the building would bear.

Punch begged him to accommodate the still homeless Houses of Parliament with a glass palace. From start to finish, he made only one mistake, when he wrote an open letter to Lord John Russell appealing for free admission to the exhibition; for in the heyday of *laissez faire* it was thought so heretical that Government should have to pay for a display of which private industry was going to reap the benefit, that his appeal was interpreted as a declaration of bankruptcy on behalf of the Commissioners.

While Paxton triumphed, Henry Cole and his assistants on the Executive Committee were grappling with the problems of all nations. Chaos ruled over the foreign committees. Nobody at home or abroad knew what to send or when or where to send it. The Swiss committee had to be deterred from sending a consignment of cheese; from France a parcel arrived addressed to

"Sir Vyatt [1] and Sir Fox Enderson Esquire,
Grate Exposition Park of Hide at London,
Glace softly to be posed upright."

All the confusion was coped with by the issue of meticulous and dictatorial instructions, and in the end it was sorted out. To begin with, the building was not handed over on the 1st of January. The contractors had to be given a month's grace on account of the additional galleries, but it was decided to adhere to May the 1st as the opening day; even then it did not look as if any of the foreign exhibits would be ready in time. The Board of Customs and Excise agreed to admit all goods to the exhibition duty free, treating the building as a bonded warehouse. Parliament passed a short Act by which designs could be registered free

[1] This was Digby Wyatt, the Secretary of the Executive Committee. He was a member of the family of architects, and the joint designer with Brunel of Paddington Station.

for the duration of the exhibition, for the fear of imitation was deterring many possible contributors. The privilege of issuing a catalogue was farmed out for £3,200 and a royalty of twopence to Messrs. Clowes, who cannot be said to have made the best of the job. Elaborate and expensive arrangements had to be made with the Commissioner of Police. Tenders were invited for the catering. Three refreshment-rooms of different classes were to be provided; but on no account were they to "assume the character of a tavern." No cooking would be allowed, and emphatically no "intoxicating liquors"; the unfortunate consumers of "light and moderate refreshments" were not even to be allowed to sit down for fear of a tavern atmosphere. On these terms Messrs. Schweppes won the contract with a bid of £5,500.

Important questions arose as to the style of the decorations. These were entrusted to a Mr. Owen Jones,[1] who succeeded to perfection; he painted the underside of every girder red, the round portions of the columns yellow, and the concaves and hollows blue. But the master stroke was that of Barry, who suggested that the long flat lines of the stepped-up roofs should be surmounted by the flags of all nations waving from a thousand poles.

There came a time when the unfinished building had to be closed for the reception of goods—a decision which was accepted by the public with almost as much regret as the closing of the exhibition itself. On the last day, a Saturday, 5,000 visitors saw round the building, including the Queen's mother, the Duchess of Kent; on the Sunday, all London came to the Park to gaze through the glass walls; on the Monday, Messrs. Fox & Henderson entertained both Houses of Parliament with a private view. Even if the building had

[1] Known as Alhambra Jones, on account of his great knowledge of Moorish architecture.

struck down at this moment, as Colonel Sibthorp fervently prayed in the debate on the Address, it would have justified its existence by now; for it had provided one of the most popular shows that London had enjoyed since the Great Fire. Public interest abated a little during the three months of preparation; but the success of the exhibition was now a certainty. Wonderful accounts were published in the papers of strange and enormous exhibits that were being got ready; of monstrous models and engines, and priceless jewellery and colossal statuary, and household furniture made of coal. National pride and curiosity simmered and rose in anticipation of the 1st of May.

One final obstacle enlivened the dull work of listing and arrangement. With the completion of the glass roof over the transept, a genial warmth suffused the bright interior of the building. The elms took kindly to the unaccustomed atmosphere, and put their leaves out early. But the conditions proved even more congenial to the sparrows that were wont to inhabit them. Outside in the Park it was March; but here in the Crystal Palace it was June. They flocked inside; they nested, they propagated, and they performed their natural functions with all their usual nonchalance. They began by being a bore; they rapidly became an intolerable nuisance. Hundreds of men working underneath were hourly anointed; unwelcome tributes showered upon the exhibits. Masterpieces of sculpture were rendered ridiculous; the priceless carpets of the Orient were unrolled only to be ruined. The Prince Consort himself was not exempt from indignity; and it became difficult to satisfy the Queen's desire to see how things were getting on. It was impossible to shoot the birds without doing incalculable damage to the fabric: nets were apt to go crashing through the glass walls. Things were at a standstill. It seemed that Sibthorp had triumphed in an unex-

pected quarter : the British elms were taking a terrible revenge. The Executive Committee, the Commissioners themselves were baffled : Paxton was baffled : Fox & Henderson were baffled. All the skill of Brunel and Stephenson was in vain. The Prince Consort, who had overcome so many difficulties, was defeated by this. Worse than all, it could no longer be kept a secret from the Queen.

The Queen knew that there was only one thing to be done ; she sent for the Duke of Wellington. He had saved the state in darker hours than this : none of the many problems of his long career had ever baffled the Duke. And was he not Ranger of Hyde Park : had he not been an almost daily visitor to the building ? The Duke attended : very nearly stone deaf, he heard from the Queen's own lips of the awful problem.

" Try sparrow-hawks, ma'am," he said.



The Opening Day

A FEW days before the 1st of May, it was announced that the Queen would open the Great Exhibition privately on the morning of that day, and that none of the public would be admitted until the afternoon. Such an arrangement caused consternation among the 25,000 people who had paid three guineas for season tickets ; it also insulted them not a little. It was killed by a thunderbolt from Printing House Square ; *The Times* went so far as to observe that Queen Victoria was *not* Lady Godiva. The plan was immediately cancelled : all season ticket holders were to be admitted to the opening. Much against the will of Prince Albert, who could never believe that his wife was safe in a company of her own subjects, the Queen was permitted to take part in a ceremony, which, to those who witnessed both, seemed to eclipse the splendour of her coronation.

The 1st of May was a Thursday. Wednesday evening found everything in a state of pandemonium. Packing-cases littered the ground ; lengths of red carpet hung tipsily from the girders ; all was dust and noise and temper. The French department was almost empty. In the evening, two companies of the Grenadier Guards were called in to clear the place of belated exhibitors and their litter. All night the gas-light glowed upon sweating carpenters and seamstresses. By eight o'clock there was to be seen, in the mouth of the north transept, a stately dais, covered by a carpet worked by 150

ladies in Berlin wool ; upon it stood a Chair of State draped in a velvet mantle of crimson and gold ; an octagonal canopy of blue satin hung far overhead ; while the higher branches of one of the trees of liberty towered in the background. Just inside the north entrance a robing-room had been improvised for the Queen's use—a curious tent of tapestry and fluted silk.

Outside the building it was a showery, bright morning. The church bells were ringing, most of the shops were shut. The Palace glistened with paint and rain and sunlight—several hundreds of flags fluttered and shone along the rising levels of the roof.[1] On the Serpentine, a fleet of little rowing boats and sailing boats slipped to and fro ; a model frigate, fully manned, prepared to give a miniature salute ; military bands cast their sugary music across the water ; at one corner a balloon was being inflated in readiness for the great moment.[2] There were upwards of half a million people in the Park. Every tree was thick with small boys ; top-hatted constables attempted to preserve the sanctity of Rotten Row ; the industrious poor were picnicking and sleeping and dancing on the grass. The roof and gardens of Apsley House were crammed with the small children whom the Duke of Wellington delighted to honour. Constitution Hill was a seething mass of Colonel Sibthorp's " assassins and pickpockets." Traffic was almost stationary ; then as now, the authorities chose the busiest months of the year in which to uproot the principal thoroughfares of London ; and the carriages of the season-ticket holders extended to far along the Strand.

The doors were opened at nine o'clock. Even to those who had often visited the Palace during the winter, the scene that now con-

[1] Thackeray has left the best description of the excitement of that morning, in his " May-Day Ode ", which is printed in Appendix I.

[2] By Charles Spencer, the second of the great dynasty of balloonists.

fronted them seemed almost too wonderful to be believed. Lord Macaulay thought it beyond the dreams of Arabian romances : it was more overwhelming than one's first entry into St. Peter's. Lord John Russell, less allusive, could only gasp that it was astonishing in the extreme.

At the intersection of the nave and transept a huge glass fountain played in the sunlight. The dais stood in the north transept, flanked by coloured equestrian statues by Wyatt of the Queen and the Prince. The south transept was lined with statuary ; the largest of the elms projected through the roof of the south entrance-hall, and spread itself with a noble symmetry across the fan of the south arch. Upon the dais was Lord Granville, in his capacity of Vice-President of the Commission, sweeping away shavings with a household broom.

At about ten o'clock a roar of cheering from outside heralded the arrival of the Duke of Wellington, early as ever. A minute later he bobbed up unexpectedly, with Lady Douro on his arm, in a corner of the gallery, in the Wax Flower section to be precise. The building rang with acclamations, which were redoubled when the whisper went around that this was the hero's eighty-second birthday. After showing his daughter-in-law the view from the gallery, he descended to the dais to greet old Anglesey [1] : and as they were chatting together, " to the immense amusement of everybody, a Chinese mandarin, with a tail of fabulous length " appeared before them and made a deep obeisance. There were more cheers for Wellington as he acknowledged this strange greeting, and more cheers when he went over and talked to Paxton, and more cheers when he talked to Mr. Fox.

[1] Everybody knew that he had only lately been reconciled with Anglesey after a long estrangement. Anglesey, then Lord Uxbridge, was the hero who galloped past Wellington at Waterloo, exclaiming " By God, I've lost my leg," to be answered with the famous " Have you, by God ? "

Adorable old man ; he did everything with such ease and grace, they could never have enough of him.

The Cabinet and the Corps Diplomatique [1] arrived in driblets and stood nervously about. The Lord Chancellor discovered a tap which controlled the glass fountain, and amused himself by turning it on and off. Swarms of ticket-holders poured in, the women all wearing the inevitable bonnet and shawl. Down each half of the avenue extended two rows of red carpet, nearly a mile of it in all. Along each side of the carpet were ranged six rows of chairs, which were entirely filled with women ; the men standing behind formed a sombre background to the riot of dresses. Far above them the showers spattered on the roof, then cleared towards midday and gave way to what was even then known as " Queen's weather."

Shortly before twelve, the Queen left Buckingham Palace. To the disappointment of the crowd, she went in a closed carriage at a brisk trot, and arrived at the north entrance of the Crystal Palace, in Rotten Row, at ten to twelve. A salute of guns was fired from the other side of the Serpentine,[2] and the Royal Standard was broken from the summit of the building. Within the building, there was a flourish of trumpets, followed by an interval while the Queen retired

[1] The foreign representatives were divided in their views as to the exhibition, and had decided by a majority not to present an Address on the occasion. After receiving a reply to the effect that *Sa Majesté ne peut pas forcer le Corps Diplomatique d'accepter une politesse*, they wished to change their minds, but were not given the opportunity.

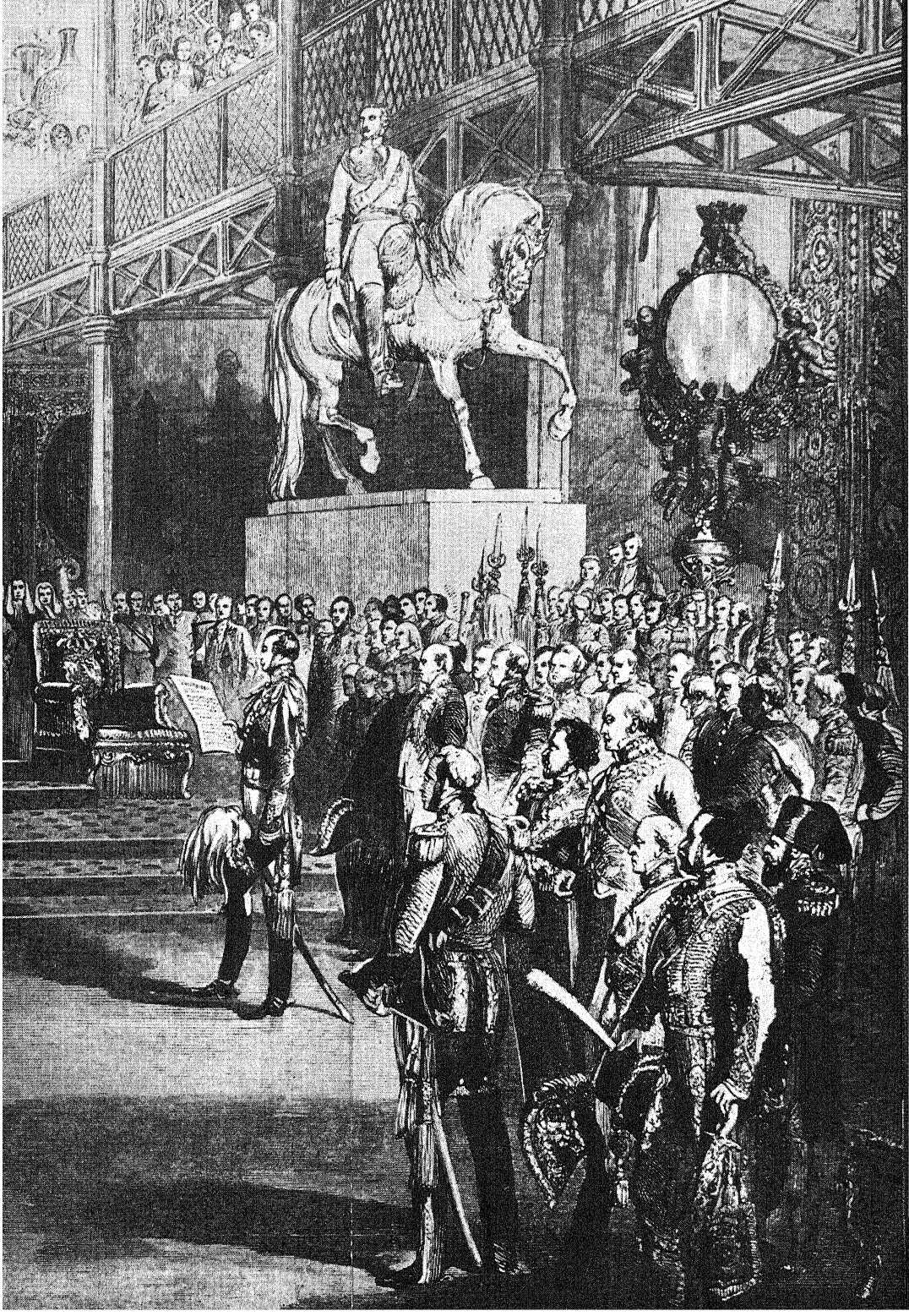
[2] " Even at the last moment the prophets of evil had begged and prayed that a salvo of artillery announcing Her Majesty's arrival in the Park should not be fired, seeing that the ' concussion would shiver the glass roof of the Palace and that thousands of grand ladies who were to be in their seats by 10 a.m. would be cut into mincemeat.' The prospect of the calamity was so appalling that there is little doubt a number of nervous people were deterred from attending the opening ceremony " (*Catalogue of the Sale of the Crystal Palace* 1911).

to her robing-room and the spectators sang " God Save the Queen." Then amid roars of applause she appeared through a pair of immense bronze gates, contributed by the Coalbrookdale Company, and passed between the statues and tropical plants to the Chair of State. The National Anthem was sung once more, the crowd being led by a choir of a thousand voices and an organ. The Prince then descended from the dais, and standing before his wife, read her the address of the Royal Commissioners, which was a long and verbose recapitulation of the events which everybody knew already, chiefly notable for the meagreness of its tribute to Paxton. The Queen then read a gracious reply ; the Archbishop of Canterbury offered up a prayer of no small length ; and the organ and massed choirs burst forth once more into the Hallelujah Chorus.

During this well-chosen interlude, the mandarin made a second appearance. Sidling his way through the ranks of the Corps Diplonatique, he came out into the space before the dais with perfect self-possession, and bowed low before the Queen, who was delighted with him. After a good deal of whispering as to his identity, he was commanded to join the procession which was now being formed. He took his place accordingly between the Archbishop of Canterbury and the Comptroller of the Household, and processed with the utmost dignity round the entire building. Several times during the ceremony, the Prince of Wales was heard to express a strong desire to make his acquaintance. But beyond the fact that his name was He-Sing, and that he had come to London on the Imperial junk Ke-Ying, nobody succeeded in discovering his mission : though subsequent events revealed that his action was a publicity stunt worthy of a less-agreeable age.

The Procession was headed by Paxton and Fox (Henderson was seriously ill). Cole followed with all the rest of the members of the various Committees. Then followed twenty-five Foreign Com-





missioners, and twenty-four Royal Commissioners ; the Corps Diplomatique ; Field-Marshal the Duke of Wellington, K.G., Commander-in-Chief, aged eighty-two,[1] arm-in-arm and exchanging small talk at the top of his voice with Field-Marshal the Marquis of Anglesey, K.G., Master of the Ordnance, aged eighty-three ; the Cabinet in Windsor uniforms ; the Archbishop ; and the Household, some of whom were walking backwards. The Queen wore a low dress of pink watered silk, brocaded with silver and heavily ornamented with diamonds ; a head-dress of feathers and diamonds ; and the armlet, the riband, and the George of the Garter. She led the nine-year-old Prince of Wales, who was wearing the kilt. Prince Albert, who led the Princess Royal, was in Field-Marshal's uniform. With them were the Prince and Princess of Prussia, Prince Henry of the Netherlands, and Prince Hohenlohe—the only foreign royalties whom they had succeeded in persuading to attend.[2] The tail of the procession consisted of royal relatives and lesser members of the Household.

Down the west nave they went—past the trophy of Spitalfields silk, past the Gothic rood screen, past the Coalbrookdale Dome, past the Britannia bridge, past the Lord Mayor's barge. At the west end, " as they wheeled round the model of the Liverpool docks, the gigantic organ by Willis suddenly hurled forth its immense volume of sound." Then back again to the transept, and into the east nave, where were gathered the foreign exhibits, still in wild disorder. But it mattered

[1] Besides being Wellington's eighty-second birthday, it was the first birthday of his godson, the present Duke of Connaught. The Queen's diary records " the visit of the good old Duke on this his eighty-second birthday to his little godson, our dear little boy. He came to us both at five, and gave him a golden cup and some toys, which he had himself chosen, and Arthur gave him a nosegay."

[2] The Prince of Prussia was only allowed to attend after a long struggle with his father, who thought a revolutionary disturbance inevitable, in which he was backed up by the formidable King of Hanover.

little what was or was not exhibited, for the Queen could see little but the solid ranks of her cheering subjects. What she saw she liked, particularly the huge bronze Amazon by Kiss ; but she was walking almost in a trance of happiness and pride.

From the gallery, hundreds of people watched through field-glasses a spectacle that must have been enchanting. The procession was as long as either nave, and took half an hour to complete the circuit. On either side of the red carpet, the unbroken rows of women, all in their brightest satins and velvets, gave the effect of an interminable herbaceous border ; some of those who took part in the procession almost fainted at the concentration of so much female beauty. And then the cheering which rose in two waves as first Wellington and then the Queen went by, till it seemed the glass would crack. And the roar of Willis's organ, taken up by two foreign organs in the east nave. And the sunshine, and Mr. Owen Jones's bright colours. What with one thing and another, even the Lord Chancellor was in tears.

Back at the dais, the Queen availed herself of the voice of Lord Breadalbane to declare the exhibition open. At the same moment a second salute was heard from beyond the Serpentine. The National Anthem was sung again, and the Queen departed. The public surged over the barriers and plunged among the wonders of industry and art.

The Queen confided the ecstasy of her feelings to her private diary[1] :

> The great event has taken place—a complete and beautiful triumph —a glorious and touching sight, one which I shall ever be proud of for my beloved Albert and my country. . . . Yes ! it is a day which makes my heart swell with pride and glory and thankfulness !

[1] Martin : *Life of the Prince Consort, II*, 364–6.

The Green Park and Hyde Park were one densely crowded mass of human beings, in the highest good humour and most enthusiastic. I never saw Hyde Park look as it did—as far as the eye could reach. A little rain fell just as we started; but before we came near the Crystal Palace the sun shone and gleamed upon the gigantic edifice, upon which the flags of all the Nations were floating. We drove up Rotten Row and got out at the entrance on that side.

The glimpse of the transept through the iron gates, the waving palms, flowers, statues, myriads of people filling the galleries and seats around, with the flourish of trumpets as we entered, gave us a sensation which I can never forget, and I felt much moved. We went for a moment to a little side room where we left our shawls, and where we found Mama and Mary. In a few seconds we proceeded, Albert leading me, having Vicky at his hand, and Bertie holding mine. The sight, as we came to the middle, where the steps and chair (which I did *not* sit on) were placed, with the beautiful Crystal fountain just in front of it,—was magical,—so vast, so glorious, so touching. One felt,—as so many did whom I have since spoken to—filled with devotion, —more so than by any service I have ever heard. The tremendous cheers, the joy expressed in every face, the immensity of the building, the mixture of palms, flowers, trees, statues, fountains,—the organ (with 200 instruments and 600 voices, which sounded like nothing), and my beloved husband the author of this "Peace-Festival", which united the industry of all nations of the earth,—all this was moving indeed, and it was and is a day to live for ever. God bless my dearest Albert, God bless my dearest country, which has shown itself so great to-day!

The Prince Consort, for his part, informed Mr. Henry Cole that the opening of the exhibition had been "quite satisfactory."

British Contributions

THANKS to the labours of Mr. Cole and the Secretary, Mr. Wyatt, the exhibition was exceedingly well arranged. Foreign exhibits were placed in the east half of the building and classed under their respective countries ; British exhibits filled the west half, and were scientifically divided into four classes ; minerals and raw materials, machinery, manufactures, and fine arts. The more imposing exhibits from all countries and classes were ranged in the central avenue, and some of the least larcenable were placed outside the building in the open air. Thus if we approach the west door, we shall get the more indigestible exhibits over first, and proceed from lumps of ore to finished jewellery and household ornaments by progressive stages.

The first thing that strikes the eye as we approach the West Entrance, is one of the few exhibits that never parted company with the Crystal Palace, but could be seen at Sydenham to the last. This is a colossal equestrian statue of Richard Cœur de Lion by Baron Marochetti, a favourite sculptor of the Queen's. A little to the north of this stands a small engine house, made of the same units as the Palace itself, from which Messrs. Armstrong's boilers supply power to the " machinery-in-motion " department. Ranged in front of the building are a number of lifeboats, anchors, and specimen blocks of stone and coal, the palm being taken by a single block of twenty-four tons of coal from the Duke of Devonshire's Staveley mines near Chatsworth.

Entering the building, we are confronted with the largest sheet of plate glass ever made, and a model of the Liverpool Docks which is ornamented with 1,600 fully-rigged ships. Spurning the enticement of the main avenue, with its crowded miscellany of strange and lovely things, we must turn right and plunge into a formidable array of raw materials. Coal and iron ores inevitably fill most of the space; but here are many stranger things—gold from Wales, pearls from Aberdeenshire, curling-stones from Ailsa Craig, fuller's earth from Surrey, copper from Cheshire, agates from Sussex, lead and tin and china-clay and arsenic from Cornwall, chalk from Dunstable, and the weird spars of the Peak District. Here too are vases, snuff-boxes, and a garden seat for Osborne made from coal, and busts of Victoria and Albert and Albert's greyhound and Sir Robert Peel, all made from zinc.[1] Innumerable marbles, alabaster and porphyry, granite and serpentine, make up a few of the rich variety. Next comes a department menacingly labelled " Substances Used As Food.' As nothing either perishable or intoxicating or explosive is allowed inside the building, there is little here to tempt the appetite except honey, coffee, preserved fruits from Fortnum & Mason, and chocolate. Colman's exhibit mustard; Reckitt's exhibit starch. Gunter's cakes are thought worthy of a more enduring material. There are quantities of tobacco and cigars, but no such thing as a cigarette. There is a canister of boiled mutton, supplied to one Arctic explorer in 1824, and found by another in perfect condition in 1849. And, an exception having been made in favour of alcoholic drinks if " derived from unusual sources," there are bottles of champagne made from rhubarb, bottles of " champagne sparkling hock " made from a mixture of raisins, sugar candy, and honey, bottles of Madeira made from malt

[1] Not to mention a table of " bright chocolate marble " from Dartington Hall.

and sugar extract, and bottles of Frontignac flavoured with the evil-smelling flower of the elder.

Our next department if we miss out Vegetable and Mineral Substances, is that of Machinery. This, to the actual crowds who went there, was by far the most important section of the exhibition. 1851 was the very crest of the wave which carried steam-power from the domestic use of collieries to the command of the land and the sea. In more than a generation, the petrol engine has not yet entirely conquered England ; but the steam engine, in a bare twenty years, had come to be the outstanding factor of British life. Giants like Brunel and Stephenson were still carving their great tunnels and throwing bridges and viaducts across the face of England. Brunel was even now designing the *Great Eastern* steamship. Fortunes were being made, the face of England was being transformed, the lives of millions were being made wider and brighter by the railway. Steam was a living thing, a wild romance. There seemed no limits to its power. So that the huge oscillating masses of iron in the northern aisle drew greater crowds than all the treasures of the courts of fine arts.

" Machines for direct use " included Railway and Marine machinery and ordinary horse-drawn carriages. The scene here was dominated by a number of locomotives. The Great Western exhibited an ordinary broad-gauge engine ; it weighed 31 tons, and travelled at sixty miles an hour ; other railways sent their expresses, two of them designed by Crampton, but the narrow gauge was dwarfed by the monster from Swindon. Ransome & May of Ipswich exhibited a variety of sleepers and other railway equipment. There were an enormous number of patented and " improved " signals, brakes, turntables and so forth. The inventions were of widely varying importance. One of the most exciting was Professor Crestadoro's Impulsoria. This was a railway locomotive the driver of which was

mounted on horseback, and controlled a team of four horses with whip and reins. The horses, progressing along an endless belt, transmitted power by means of variable gears to the wheels. On highest gear, it was expected to reach a speed of sixty miles an hour, and the principle had been successfully tried at Nine Elms station.

Passing from the railway section, the most interesting exhibit was that of James Watt & Co. of Soho. Side by side, they showed a three-wheeled road steam-engine made by the original firm of Boulton & Watt in 1785, and their latest marine engine, which possessed " the collective power of seven hundred horses." Here also was Montgolfier's hydraulic ram, and a hydraulic press which had lifted 1,144 tons at the Britannia Tubular Bridge. Fox & Henderson exhibited the slender derrick crane which had lifted all the neighbouring objects into their places. Mr. Henry Bessemer exhibited nothing but pumps ; his steel discoveries did not come till four years after this time. Maudslay's exhibited marine engines ; George and John Rennie, the sons of the architect of Waterloo Bridge, exhibited models of several marine engines they had built for the Admiralty. W. G. Armstrong showed a model of a hydraulic crane : Moses Merryweather showed the familiar fire engines : Mr. Shillibeer, the great undertaker, an expanding hearse. Paddle-wheels and windmills brought up the rear. Perhaps the spirit of the age was best exemplified in a mine-cage designed to prevent " destruction to property " in case the rope snapped.

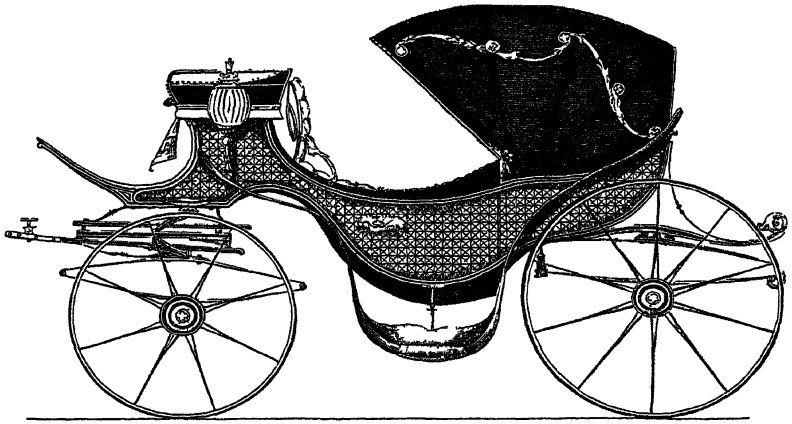
But included in this section were the Carriages. The railway might have displaced the horse in commerce and in the lives of the people ; but the horse was still the only means of progression for purposes of pleasure, and the art of carriage-building was at its height. It is hard to describe in words the beauty of the carriages at the Exhibition. Victorias, gigs, curricles, traps, broughams, sociables,

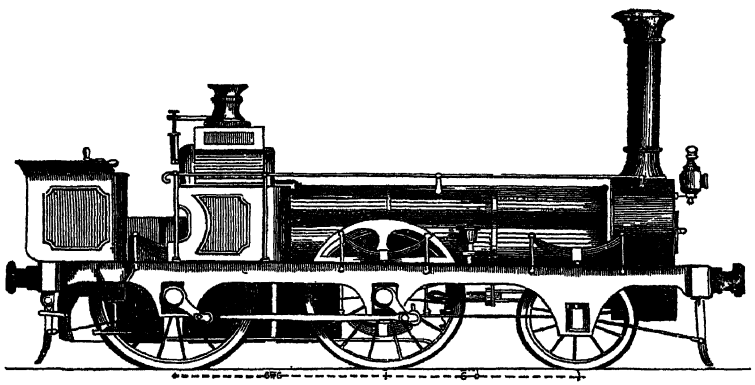
phætons, cabriolets, coburgs, dog-carts, landaus, basternas, barouches, buggies, britzkas, berlins, clarences, chariots, state coaches and jaunting-cars were ranged together in a glorious medley of extravagance and elegance. They gleamed with paint and leather and chintz ; they swayed upon intricate convolutions of slender springs. Eager assistants pulled the hoods up and down, showed off the devices for preserving human life, and pointed to the daring innovation of Indiarubber shock absorbers. Mulliner & Hooper were here in their glory ; and there was little attention to spare for the one or two velocipedes that stood alongside.[1]

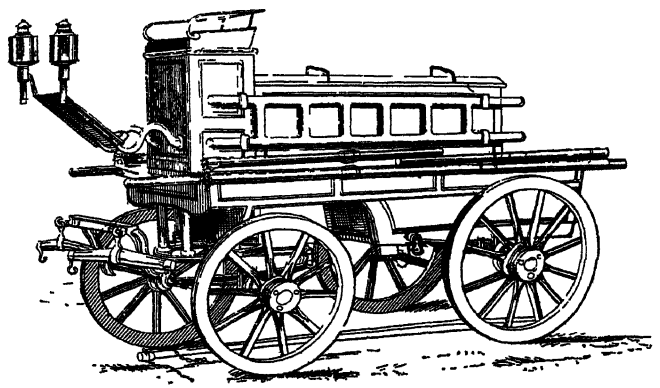
Reluctantly we turn to Manufacturing Machines and Tools. Here was a less popular department. The Prince Consort had a passion for this kind of thing, and visitors from Lancashire might be seen lost in admiration before Hibbert & Platt's slubbing-machines or Macindoe's self-acting mule or the monstrous Jacquard loom. But the Londoner passed by. Probably he stopped a moment at Nasmyth's steamhammer which at one adjustment would crack an eggshell and at another would forge the main bearing of a steamship. Another centre of attraction was the Applegarth & Cowper printing machine, which was furiously at work printing 5,000 copies of the *Illustrated London News* every hour.

Civil Engineering, Architecture, and Building Contrivances comprised a wide range of exhibits much to the taste of the Victorians. Here again were a number of optimistic inventions and improvements. Mr. Clark of the Seaside Hotel at Hastings showed a model for a proposed canal across the isthmus at Suez, which would save half the voyage to India. Mr. Devey showed a method of adjusting chimney-stacks so as to carry the smoke down into the public sewer

[1] One of the carriages was so constructed for some reason as to lay down rails in front of it and take them up behind.









THE "PILENTUM."

(Designed by Mulliner).

LOCOMOTIVE TANK ENGINE.

(Wilson & Co.)

The peculiar features of this engine are, its having two separate fire-boxes and boilers, so arranged that the stoking can be performed at alternative intervals in each box.

IMPROVED BRIGADE FIRE ENGINE.

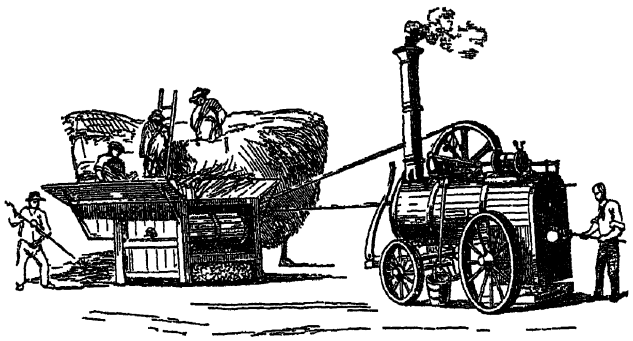
(Shand & Mason).

instead of up into the air. Turner's of Dublin, who had themselves submitted a less feasible plan than Paxton's for an exhibition building of glass, showed a number of models of enormous greenhouses, including the great palm-house still at Kew, which they had lately built to the design of Decimus Burton. Among many exhibits of lighthouses, the Stevenson family figured prominently. Alan, the uncle of Robert Louis Stevenson, exhibited models of Skerryvore Lighthouse, built by himself, and Bell Rock Lighthouse, built by his father Robert. Thomas, the father of Robert Louis Stevenson, who had been born the previous year, exhibited a variety of lighthouse lenses, reflectors and lights patented by himself. But the real interest centred upon Bridges. It was a great age of bridge-building. Railways were spreading all over the world, at the rate of hundreds of miles a day ; and wherever railways went, bridges must be built to carry them. And, in the same spirit of adventure, the Victorians built most of their bridges of iron. Till 1777, when the Coalbrookdale Company erected a cast-iron bridge near their works in Shropshire, at a place still called Ironbridge, this possibility had never been explored. Rennie and Telford had used iron in many bridges ; but the great masters of the technique were Stephenson and Brunel. Stephenson had completed in the last two years the Conway Tubular Bridge, the Britannia Tubular Bridge over the Menai Straits, and the High Level Bridge at Newcastle-on-Tyne. Brunel had built the Clifton Suspension Bridge at the age of twenty-five and was even now engaged on Chepstow Bridge : lesser bridges on the Great Western system came from him almost weekly. A small model of the Chepstow bridge (unlike the others, a wrought-iron bridge with an overhead trellis) was exhibited in the gallery, and a large model of the Britannia Bridge in the main avenue ; but the most spectacular exhibit of this kind was a model of a suspension bridge that was then in course of erection across the Dnieper at

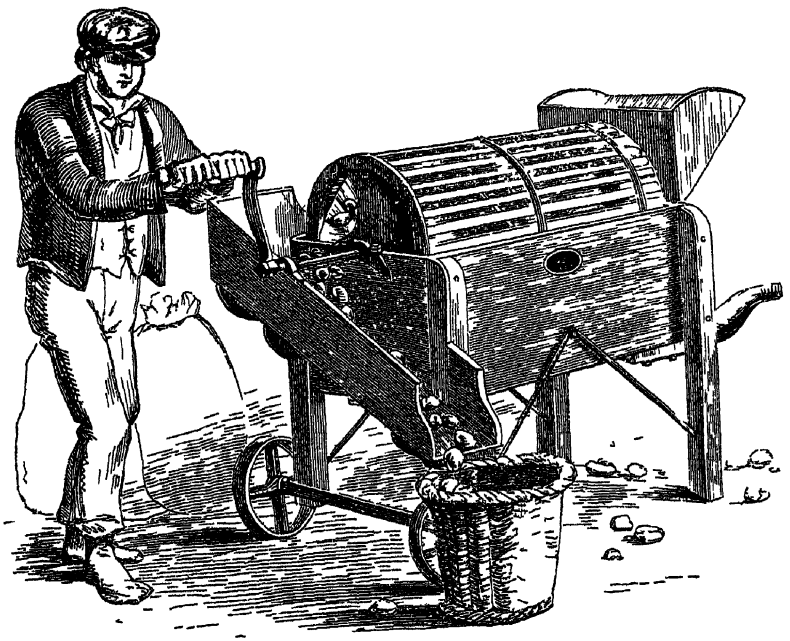
Kieff. This was half a mile long, by far the longest iron bridge then built: it was the work of an English engineer, Vignoles, and the whole of the ironwork came from England, the chains in particular from Fox & Henderson The model itself was a work of great perfection, made for the Tsar at a cost of £12,000 Other exhibits in this section promoted to the main avenue were no fewer than three models of suggested designs for the new bridge at Westminster by George Rennie, and a model of Plymouth Breakwater, which was still unfinished after thirty-eight years' work.

The department of Naval Architecture, Military Engineering, Guns and Weapons was distinguished by that impressive ingenuity and elaboration that one only finds nowadays in the catalogue of the Army and Navy Stores. There were bathing machines; there were swimming gloves on the principle of the web-foot, and swimming stockings on the principle of the umbrella There was a nautical cap easily converted by inflation into a lifebelt, and "useful in emergencies as a bason"; there was an unsinkable deck chair to support two persons whether in or by the sea, and a "safety swimming swan for shipwrecks". The Royal Humane Society showed various contrivances for rescuing skaters and swimmers; the Duke of Northumberland showed fifty-four varieties of lifeboat. Novelty was provided by a diving-suit of caoutchouc, and a submarine boat, designed to go closed under water.[1] The Royal Thames Yacht Club showed a model of a 153-ton yacht, *Nancy Dawson*, built by Camper of Gosport, which had circumnavigated the globe. The Admiralty sent a lovely array of models of brigs and frigates and men-of-war. There was a fascinating display from the Ordnance Survey. Sir Samuel Brown

[1] It will be remembered that an enterprising British sea-captain of Whig opinions had proposed to rescue Napoleon from St Helena in a submarine The submarine also played a part in the American Civil War.



FOUR HORSE-POWER PORTABLE STEAM-ENGINE.
(Barrett & Co)



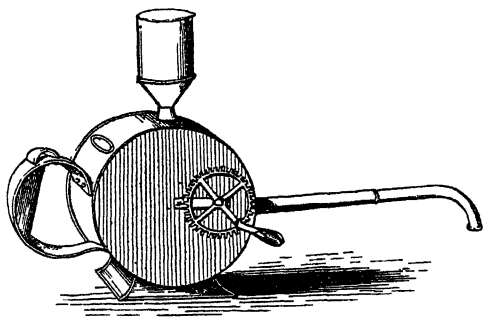
CROSSKILL'S ARCHIMEDEAN ROOT WASHER

sent the iron cables he had invented as long ago as 1810, and a model of the Brighton chain pier, which he had built in 1823. So far as possible, the Commissioners had excluded weapons of aggression from the temple of universal peace; but the quantity and quality of the sporting arms were prodigious. Manton and Wilkinson provided the finest specimens; but most of the guns came from Birmingham, as well as swords and matchets. There was a twelve-shilling rifle specially designed for purposes of barter with the African native, side by side with totally different models for the purpose of shooting him down. Also from Birmingham was a selection of shackles, leg-irons, manacles, fetters, and handcuffs made for export to the Southern States of America.

The sword, unfortunately, is far more interesting than the ploughshare. Really, we who live within earshot of the Fordson tractor need hardly dive into the southernmost recesses of the building after Agricultural Machines and Implements. Thither might be seen making their way a procession of figures straight out of Bunbury's pictures. Yokels in actual smocks, farmers in top-boots and top-hats, country parsons who still had some idea of how country people lived, all wandered off to gaze upon dibblers and grubbers, bruisers and crushers. But few people followed them; even the judging in this department was declined by the Council of Juries and entrusted to the Royal Agricultural Society. Mr. Philip Pusey, M.P., who organized the agricultural section, nobly invited the competitors to demonstrate their wares on his property at Pusey near Faringdon. The best of the exhibits were Ransome & May's; perhaps the oddest was Lord Willoughby d'Eresby's steam plough, which worked two ploughs at once on the principle of the funicular railway.

"Philosophical Instruments" would convey little to us to-day: but the word "scientific" had not yet superseded the good old phrase

of John Evelyn and Wren. Philosophical, Musical, Horological and Surgical instruments were grouped together. They ranged from exhibits of palpable lunacy to fundamental discoveries in applied science.



BROWN'S PATENT FUMIGATOR.

Tobacco is placed in the magazine at top and lighted in the same manner as an ordinary smoking pipe. A draught of air is produced for its combustion by the revolutions of a fan, which draws the smoke in at one part and drives it forcibly out at another, in a cool state, concentrated, and in any direction.

Among Philosophy, there were Ross' great telescope in the west nave, and Simms' equatorial instrument, invented to counteract the effect of the rotation of the earth upon the telescope. Ross also exhibited an improved camera obscura. There were several cameras : Mayall and Claudet exhibited photographs (or " sun pictures " as they were sometimes called) and daguerreotypes. There was even a portable camera, not to mention a " pair of portable steel spectacles ". Mr. Charles Brooke and Mr. George Dollond both exhibited registering meteorological apparatus, the former of which worked by photography. The Reverend Henry Jones showed his Patent Acolyte or safety candle-cap. Negretti & Zambra were there with their barometers. Electric telegraphs were exhibited by Reid, Alexander, Brett, and

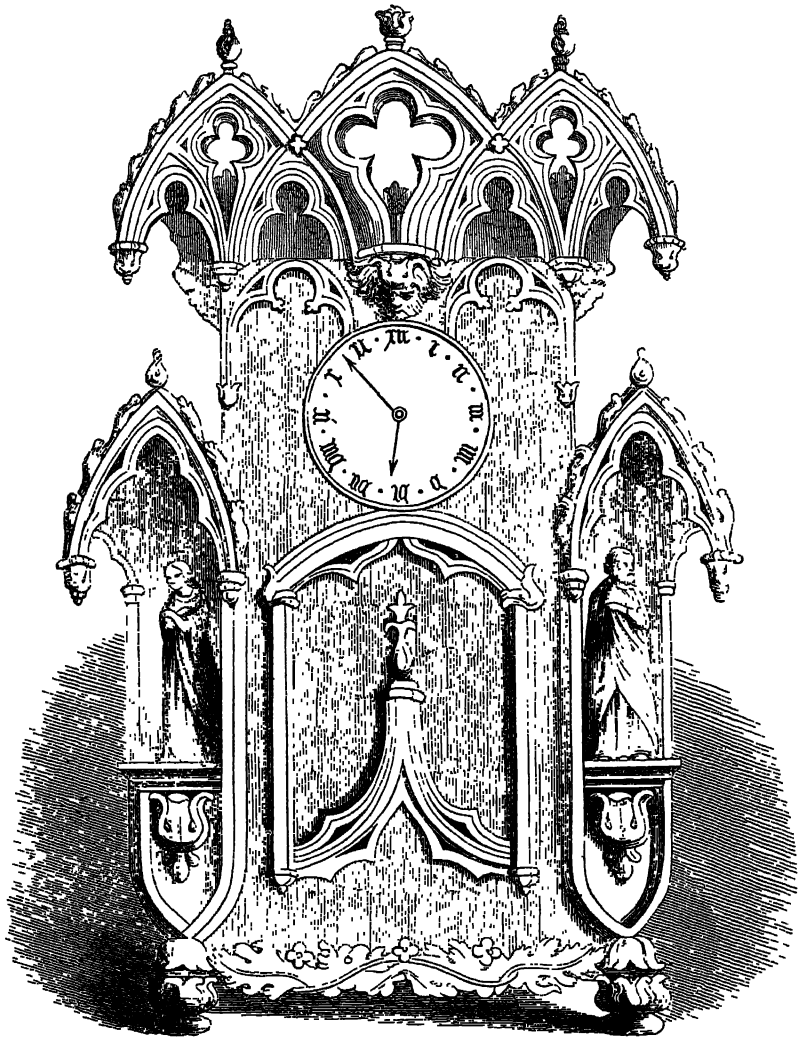
Henley. Colonel Lloyd, a Special Commissioner, exhibited a "Typhodeictor" or storm detector, made according to the principles of Colonel Reid's "Law of Storms". Aeronautical endeavour was represented by two "aerial machines", three navigable or locomotive balloons, and a charvolant or carriage drawn by kites One entirely



SMITH'S COMIC ELECTRIC TELEGRAPH.

useless object, which received a medal for no apparent reason except that it contained 7,000 parts, was Count Dunin's expanding figure of a man, which changed by turning a handle from life-size into gigantic proportions.

Musical instruments comprised many horrible inventions, including the new Harmonium. There were vast numbers of pianofortes, as might be expected, dominated by Broadwood's ebony instrument designed by the younger Barry, and Collards' Grand Piano in mottled



IMITATION OAK TIMEPIECE.

(Adams)

oak with gold decorations in the style of Louis Quinze, upon which concerts were given every day beneath the Coalbrookdale dome. There was a collapsible piano for gentlemen's yachts, and a silent piano which " resembles the ordinary piano in appearance, but when acted upon is perfectly silent." There was Gray and Davison's organ, in the north gallery, which had played the National Anthem at the opening ceremony ; in the west gallery was Willis' organ of 4,500 pipes. There were many smaller organs, and most of the times all of them were played at once. Gray and Davison also exhibited a " patent improved church barrel-organ " ; and there was a portable self-supporting pulpit, and a pulpit connected by gutta-percha funnels to the pews of the deaf. Horological instruments were dominated by Shepherd's electric clock. This was not by any means the first electric clock, but it was pretty ambitious at a time when the wiring of houses for electricity was half a century away. The pendulum of this clock was in the gallery with the other clocks ; the mechanism was in the south transept ; there were two dials on the balconies of the gallery at the extreme east and west of the building ; and on the outside elevation of the south transept, two hands had been so arranged as to use the twelve sectors of the arch as a huge clockface, the semi-circular shape being overcome by simply carrying each hand through to an equal length on either side of its pivot. A less spectacular clock was an enormous church clock in the main avenue by Dent's, who also showed watches made for the Spanish, Turkish, Persian, and Egyptian markets. Bennett's of Cheapside showed the finest display of watches, and a wind-indicator worked from a vane on the roof. Loseby showed his mercurial compensation balance. There were clocks in buhl and ormolu and malachite ; stop-watches, repeaters, metronomes, primitive clocking-in machines, sundials, perpetual almanacs, and orreries. There was a " silent alarm-clock," which

VELVET PILE TAPESTRY CARPETING.

(Pardoe).





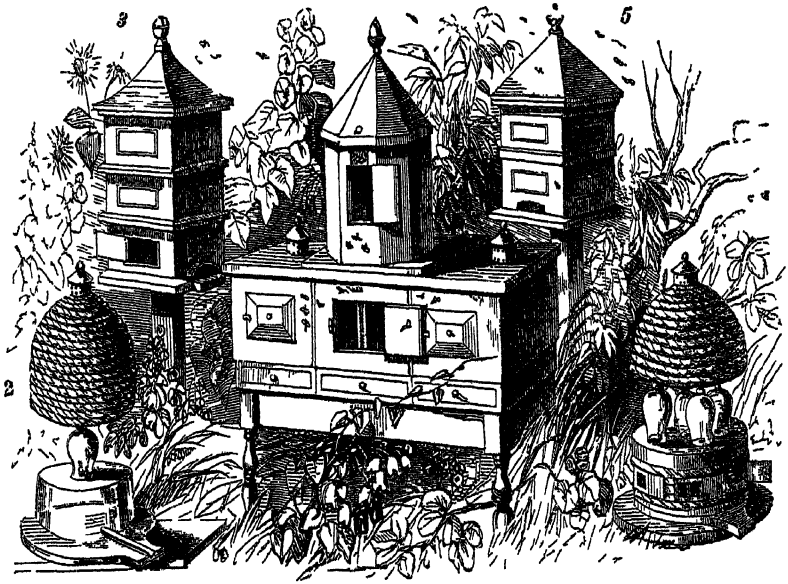
turned your bed on its side at any given hour. The Surgical counters presented a gruesome array of instruments, together with trusses and artificial limbs in great variety. But here too, Puck had been at work. One exhibitor offered a physician's walking-stick which contained an enema and some test-tubes : another a galvanic walking-stick, which gave you a slight shock if you held it with one hand, and a severe shock if you held it with both.

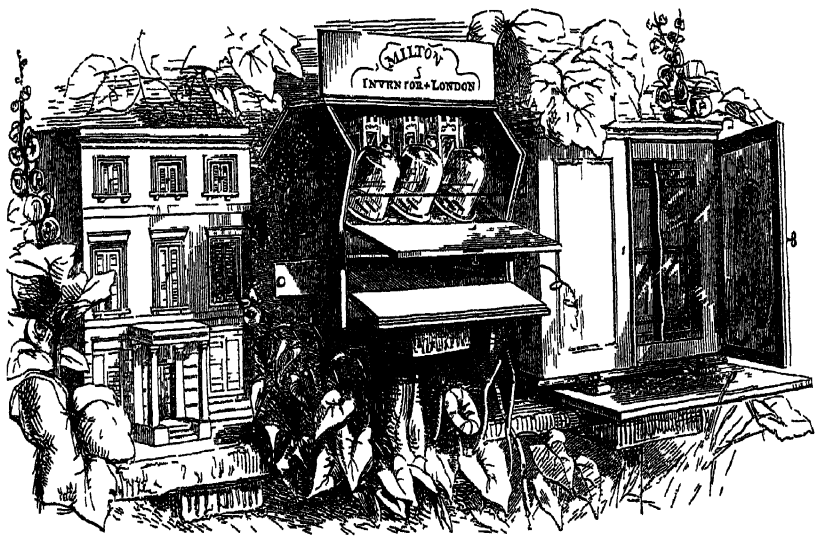
The next great division after Machinery was logically Manufactures. Here inevitably the textiles predominated. England had invested its money in railways, but it had made it in cotton. All the same we will not visit the cotton sections, but make straight for a huge trophy of silks that stands in the very mouth of the West Avenue. Here, exhibited by Messrs. Keith of Spitalfields, are " rich tissues, brocades, brocatelles, damasks, mayonettes, carriage-linings, diaphanes, and every variety of silks required for upholstery " and all magnificently draped against a column of mirrors. In the gallery above it, is a rich display of silks and velvets. Samuel Courtauld & Co. exhibit " specimens of crape and aerophane." Swan & Edgar exhibit " gros de Naples, Ducape, gros de tour, glace, satin, barrathea, Balmoral, paraphanton, watered silk, velvet, armozine, gros royal, radzimore, Berlin, Orleans, vest satin and antique watered silk." And there are plush and brocade and bombazeen and moiré and taffetas and tabinet and lutestring and poplin and sarsnet and gossamer and gauze ; and there are veils and Berthas and silk hats and fishing lines and silk whips and chenilles and galloons. It was a period that took a sensual pleasure in stuffs, when fifty guineas worth of silk were cut to swing and rustle round a single pair of legs.

Flax and Hemp ranged from fine armorial linen from Belfast to sail-cloth from Arbroath and deep-sea tackle from Bridport. Among Tapestry and Carpets were a splendid Axminster made for the Queen's

drawing room at Windsor, and the great carpet made for the opening ceremony and presented to the Queen by the Lady Mayoress and 150 ladies of Great Britain after the design of John Woody Papworth, Buonarotti Papworth's son. All along the gallery the carpets made a glorious display, Mr. Owen Jones having had them hung from the highest girders in the building between each partition of the gallery Lace and Embroidery included many curious objects, loyal and sentimental, the produce of long evenings and lonely firesides. One lady sent a set of silk chessmen, the pawns being in the uniform of Gentlemen-at-Arms. Innumerable screens and bedspreads were worked in with heads of Victoria and Albert or " Haddon Hall in days of yore." There was fine lace from Honiton ; and Heal's exhibited an exquisite crimson satin quilted eiderdown.

Articles of Clothing was a huge and fascinating array. Here were the tartan plaids that Balmoral was bringing into fashion : here were Balbriggan stockings and stockings made of fur ; bonnets of crape, horsehair, ribbon, palm-leaves, poplar, willow, and straw ; bonnets plaited, goffered, and crimped ; boots, bootees, and bootakins ; stays of silk and caoutchouc ; dress stays, riding stays, sleeping stays ; stays embroidered with the Royal arms ; gloves, gauntlets, mitts, and cuffs of kid and fawn and cashmere and vicuna and velvet from Yeovil and Woodstock ; muffs, ruffles, stomachers, comforters, and boas ; polkas and paletots and pelerines. Male clothing was dominated by the great Nineteenth Century fetish, the tremendous inessential—the Hat. There were hats for every occasion, hats for every clime. Silk hats in hundreds ; railroad caps, smoking-caps, chacos, sleeping-caps, skull caps, forage caps, even reading-caps. There was the usual buttonless, reversible, self-sustaining, self-opening, ventilating, one-piece, and even " mathematical " underwear. There was the same insistence on safety ; unpickable pockets, un-


3
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GILLOTT
INVENTOR LONDON
4



NEIGHBOUR'S "COTTAGE"
and other Beehives.

MILTON'S BEEHIVES.
The "Royal Alfred Hive" (centre) *is conveniently adapted for the purpose of taking the honey without destroying the bees.*

sinkable yachting outfits, hats that eliminated all risk of concussion from railway travel, and corsets that opened instantly in case of sudden disorder. And the ever-present touch of fantasy was added by a pair of smocks for agricultural labourers, made of white duck by the sisters Stimpson of Radley. The first was embroidered with the national emblems, a crown, doves with olive branches, "Vivat Regina," "Peace with all the world," more crowns interworked with mottoes, the Prince of Wales' feathers, the rose, the crown, the shamrock and the thistle; the other, more homely, with Industry crowned by Fame, a wheatsheaf, flowers, farm implements, "God speed the Plough," "Success to Agriculture," hives of bees, and oaks and acorns.

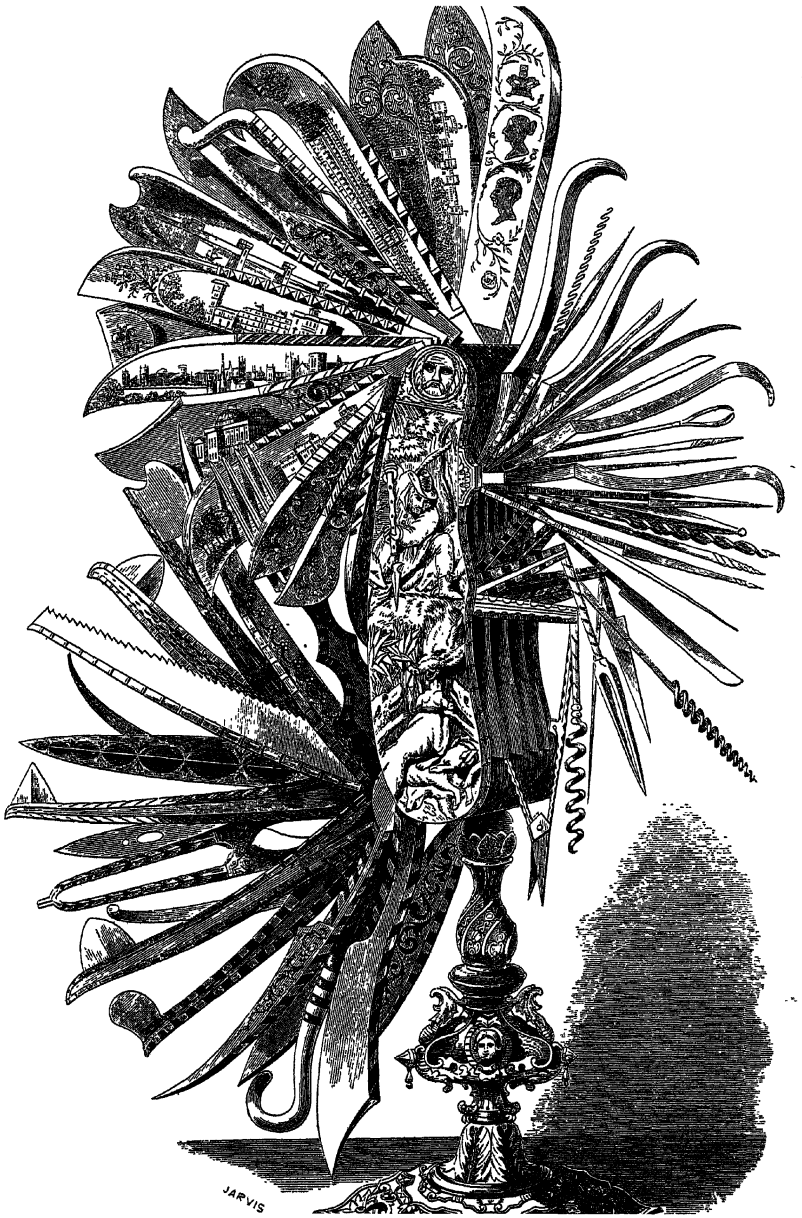
The next section contained some fine Saddlery and Harness, some atrocious Boots and Shoes, and a wonderful trophy of Skins and Furs, the joint contribution of the Hudson Bay Company and John Nicholay & Son, arranged in no less than two hundred and ten separate groups. Then came Bookbinding, which was at a very low ebb; Rivière, Leighton, Westley and others contributed hideous designs of bastard Jacobean carried out in soapy calf. There was, on the other hand, a very fine Bible, with covers carved in boxwood by W. G. Rogers, the Grinling Gibbons of the nineteenth century. The centre of attraction in Stationery was Messrs. de la Rue's envelope-making machine; before the penny post in 1840, envelopes had been very little used, and now they were being gummed and folded by mysterious plungers and pincers at the rate of forty-five a minute. Printing also included an admirable display of maps by James Wyld, an enterprising cartographer and member of Parliament. Mr. Wyld had spent months in preparing a great globe of the world for the exhibition; but it proved to be too large even for the Crystal Palace, so he set it up in the centre of Leicester Square, where it thrived for eleven years.

Cutlery contained some oddities; a masticating knife for the toothless, from Yarmouth; an ostracide, or oyster opener; a primitive form of safety razor in the shape of the "hypenetome, or beard plane"; and the inevitable fatuity—a knife with three hundred blades.

Hardware had a certain interest. Just as the ironmonger of to-day uses the patterns of 1851, so the ironmonger of 1851 was still using the patterns of the 1780's. As a result there were some handsome stoves and grates, while the portable beds and baths had a wistful charm that pointed clearly to the Peninsular War. Here, too, were some of the earlier water-closets and fixed baths, and Doulton's glazed stoneware. And here were two contraptions which nicely illustrate the various fates of invention. One was a grate which turned on a pivot, so that the new fuel could be put under the burning fuel with the result that all the smoke of the former was consumed in the flame of the latter. The other was "an apparatus for cooking by gas." The former of these devices had been thought of by Benjamin Franklin, and the latter by a Dr. Clayton, who "in 1739 boiled eggs by means of gas"; but who would have backed the gas cooker to beat the smokeless fire? There were some refrigerators, which required to be filled by large blocks of ice brought from America.[1] There were several old friends; Chubb and Milner in eternal rivalry over safes, Spear & Jackson excelling in saws and axes, and Samuel Alcock of Redditch with his hooks and lines and artificial minnows.[2] Samuel Plimsoll, who lived to invent the load-line, showed nothing more valuable here than a pocket umbrella. But the pick of the hardware was situated in various places of honour in the avenues and transepts. In the West Avenue were a fine cast-iron vase and fountain by Andrew

[1] Napoleon had a refrigerator at St. Helena.

[2] Gourlay of Edinburgh showed some "specimens of balls for playing the ancient Scottish game of 'Golf.'"


JARVIS



SPORTSMAN'S KNIFE

containing eighty blades and other instruments . . . with gold inlaying, etching and engraving, representing various subjects, including views of the Exhibition Building, Windsor Castle, Osborne House, the Britannia Bridge, etc. The handle is 12 *inches long, of mother-of-pearl, carved with subjects emblematic of the chase, from designs by Wehnert.*

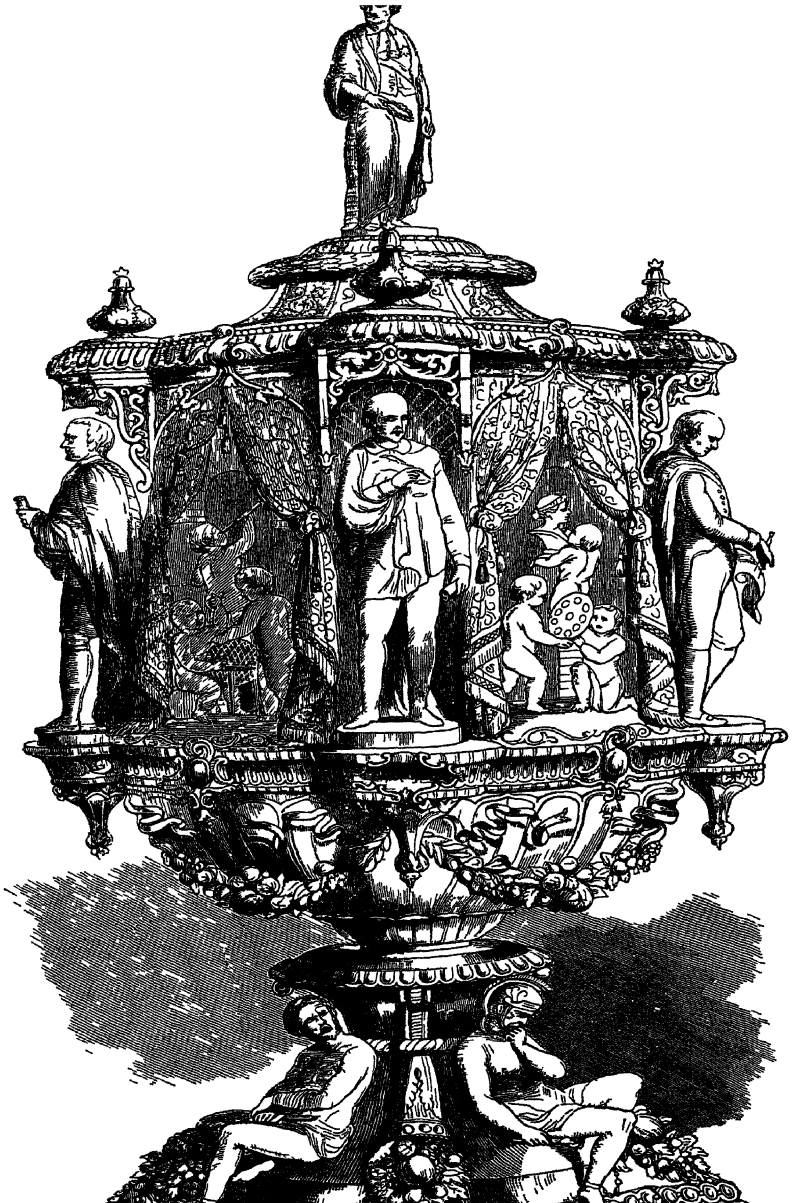
(Rodgers & Sons, Sheffield).

Handyside of Derby, the gentleman whose name is immortalized on every pillar-box. Near by was the Coalbrookdale Dome, one of the many triumphs of this grand old Shropshire firm. The dome was of bronzed cast-iron, thirty foot high. It hesitated delightfully in style between rusticity and chinoiserie. It was admirably proportioned. It might have been designed by Chambers, but was actually the work of one Crookes. Six falcons surmounted the pillars, and under the dome were a giant figure of an Eagle-Slayer with his bow, and the slain eagle pinned to the roof by the arrow which had transfixed him. These two figures were the work of John Bell, the sculptor of the Guards' Memorial in Waterloo Place. Crookes also designed the Coalbrookdale gates; these were a pair of bronzed cast-iron park gates, sixty feet wide in all, which stretched right across the north transept. They were of fine workmanship and meritorious design; but the superiority of wrought ironwork for such jobs as this is too great for cast-iron ever to supersede it. Beside these gates stood a further statue by Bell, cast in pure bronze by the Coalbrookdale Company. This was the much admired Andromeda, who stood, shy but rotund, her arms pinioned behind her, against her rock, to which she was attached by what the foundry in their technical virtuosity had attenuated to little more than a bicycle chain. This voluptuous work was purchased by Queen Victoria for £300.[1]

Now come Precious Metals and Jewellery. This is the branch of industrial art which always has the least inducement to improve itself. Supported mainly by the demand for sporting trophies and municipal presentations or by the vulgarities of oriental potentates, the large goldsmith and silversmith concerns are usually wasting any money they may spend on artistic merits, which are equally lost on

[1] Another contribution of the Coalbrookdale Company was a cast-iron altar-rail designed by Henry Cole for William Beckford.

the donors and the recipients of their goods. The standard of the present day is perhaps as low as it has ever been ; certainly it is far lower than the standard of 1851. The trophy that has recently been made for presentation to the fastest Atlantic liner would have cut a curious figure in the Crystal Palace beside the exhibits of Elkington or Hunt & Roskell. Elkington exhibited several pieces of sculpture by Baron Marochetti in electro-bronze, and an electro-plate Elizabethan vase, upon which the figure of Prince Albert surmounted those of Shakespeare, Bacon, Newton, and James Watt. Hunt & Roskell exhibited several huge pieces of testimonial plate, representing various eminent public men in the act of subduing or else liberating various captive races. One of these, a testimonial to Sir Moses Montefiore, who had struck the fetters from his co-religionists all over the near East, was of a revolting ugliness ; but the blame for this must rest upon the designer, Sir George Hayter, Queen Victoria's beloved drawing-master. There was a more ambitious testimonial to Lord Ellenborough, lately governor-general of India. The centre piece was supported by three absurd recumbent elephants ; round the pedestal a sepoy gloated over captive Afghans and Chinese, against a background of bassi-relievi ; on the summit, Britannia embraced Asia, whilst Asia endeavoured to place a laurel-wreath on Britannia's helmet. The candelabra were really lovely : recumbent camels supported a rococo vine, beneath the shade of which postured the various ranks of the English and native troops. Two end-pieces personified the Ganges and the Indus ; while countless vases, wine-coolers and fruit-dishes carried on the symbolism with the same unconstrained exuberance. Amongst a great display of other presentation plate, there were a lively testimonial to Lord Tweeddale, in which the first Hay was shown slaughtering the Danes beneath the branches of a prodigious candelabra of thistles, the Hartlepool Testimonial,





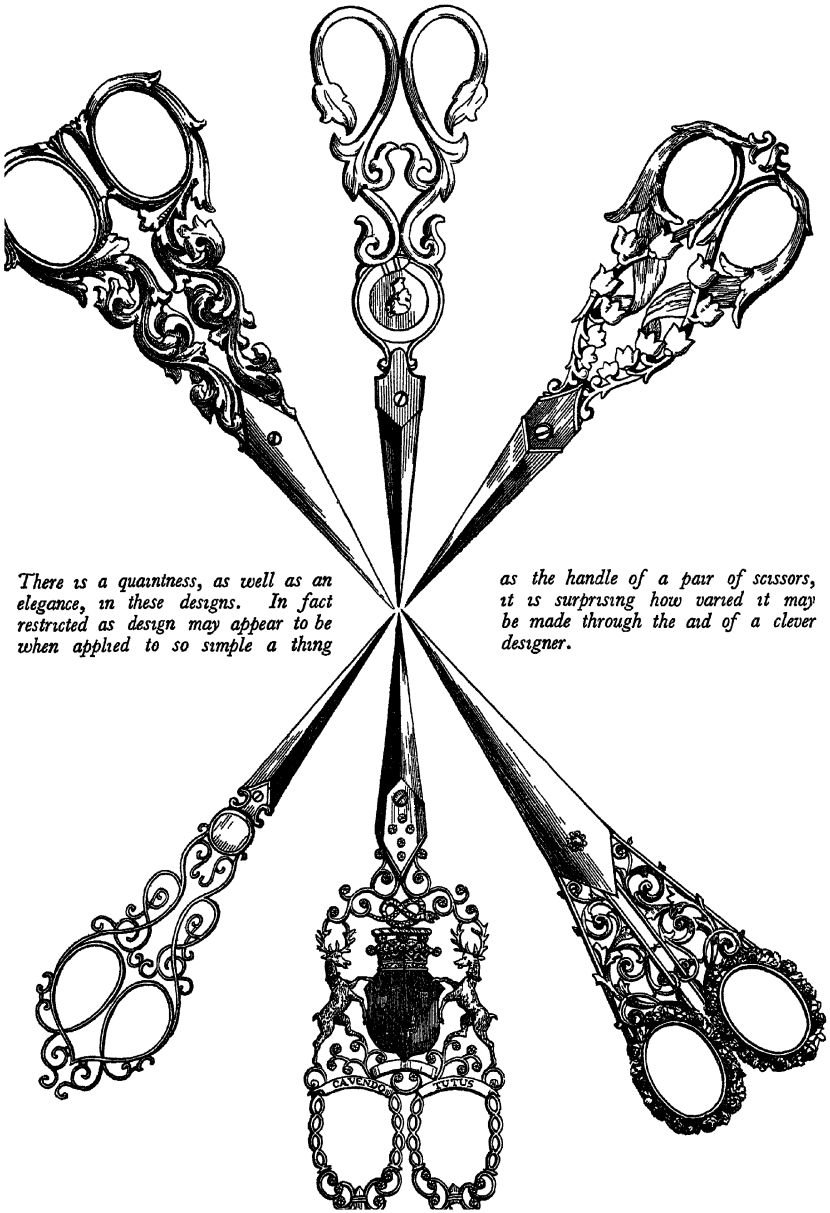
VASE REPRESENTING THE TRIUMPH OF SCIENCE AND INDUSTRIAL ARTS IN THE EXHIBITION.

The style is rich Elizabethan. The four statuettes on the body of the vase are Sir Isaac Newton, Lord Bacon, Shakespeare and Watt, representing Astronomy, Philosophy, Poetry and Mechanics. . . . The recognition and reward of these ennobling pursuits are symbolised by the figure of H.R.H. Prince Albert on the Apex.

(Designed by Wm. Beattie. Made by Elkington, Mason & Co. Height, 4 ft.)

which celebrated the completion of some harbour-works in the chaste but solid fashion of the Greek revival, and the Great Railway Salver made by Garrards' as a testimonial to Mr. Brassey.

But both Hunt & Roskell and Garrard's surpassed everything with their jewellery. Hunt & Roskell sent a diamond bouquet in which the rose, carnation, anemone, and other flowers were made up of six thousand diamonds; J. V. Morel & Co. competed with a bouquet of rubies and diamonds of immense value and exquisite design. There were also the two Hope collections. The Beresford Hopes were an enormously wealthy family from Amsterdam. Thomas Hope had settled in England, at Deepdene, in 1796. He was a great collector of sculpture, the author of a popular romantic novel called *Anastasius*, and the defendant in a celebrated lawsuit with a painter who had depicted himself and his wife as "Beauty and the Beast." His brother, Henry Hope, had formed a collection of jewels, some of which were now exhibited by Hunt & Roskell. They included green and pink diamonds, rainbow sapphires, rubies, emeralds, a Hungarian opal over an inch in length, topaz, amethyst, and aquamarine. But Henry Hope's collection was outshone by that of his son, A. J. Hope, the member for Maidstone, who showed his collection in the Netherlands department in the eastern nave. Among his jewels were the largest pearl in the world, four and a half inches in circumference; the largest blue diamond, weighing 177 carats; a flawless sapphire of 133 carats; Philippe Egalité's *saphir merveilleux*; emeralds, carved rubies, and turquoise; and Murat's sword-hilt, made of a single aquamarine. Also in the Netherlands department, the Duke of Devonshire exhibited the Knyphausen hawk, an extraordinary trophy encrusted with precious stones, made to celebrate the termination of a feud between two noble families of Holland. Another of the Duke of Devonshire's treasures was his collection of emeralds, shown in



There is a quaintness, as well as an elegance, in these designs. In fact restricted as design may appear to be when applied to so simple a thing as the handle of a pair of scissors, it is surprising how varied it may be made through the aid of a clever designer.



DOROTHEA LILY-BRACKET
fitted for gas.

the mineral department. Finally, India sent two of its most famous diamonds. The Durra-i-Noor was shown by the East India Company: the Koh-i-Noor, lately acquired by the East India Company with the rest of the contents of the Treasury of Lahore, and by them presented to the Queen, was shown in a large gold bird-cage in the east nave.[1] Its weight was then 186 carats, but it was still in its crude form, an ungainly lump of stone: a subsequent re-cutting in Amsterdam has given it its brilliance, but reduced its weight to 106 carats. There were other jewels in the foreign sections that will be dealt with in their places: but the British jewels alone are sufficient to demonstrate that here is one art which never dies. Tastes may vary and decay in every other department of life; jewels may rise to fabulous values, or become a glut on the market; imitation jewellery may fill the one-price shops; but the art and mystery of cutting and setting continue the same to-day as in 1851, the same in 1851 as in the Middle Ages.

Among Glass, the place of honour was given to Osler's cut-crystal fountain, which was placed with great art at the intersection of naves and transepts, so that by every light the sun lit up its cascading waters. It stood 27 feet high, and contained four tons of glass; it stood till the very end in a pool of goldfish at the Crystal Palace, casting a gentle spray upon the buttocks of the plaster casts. For the rest, the glass section was small, but the standard high. The industry had only come to life since the removal of the excise duty in 1845; Chance Brothers, the contractors for the glass of the Crystal Palace, were the only large makers, and they relied for much of their work on foreign

[1] Some foreigners formed a plot to steal the Koh-i-Noor. One of them, a woman, was to faint immediately in front of it, and the others were to rush to her assistance. It was given away by a servant at their lodgings. The cage was made by Chubb, and the jewel was lowered into its massive pedestal at night.





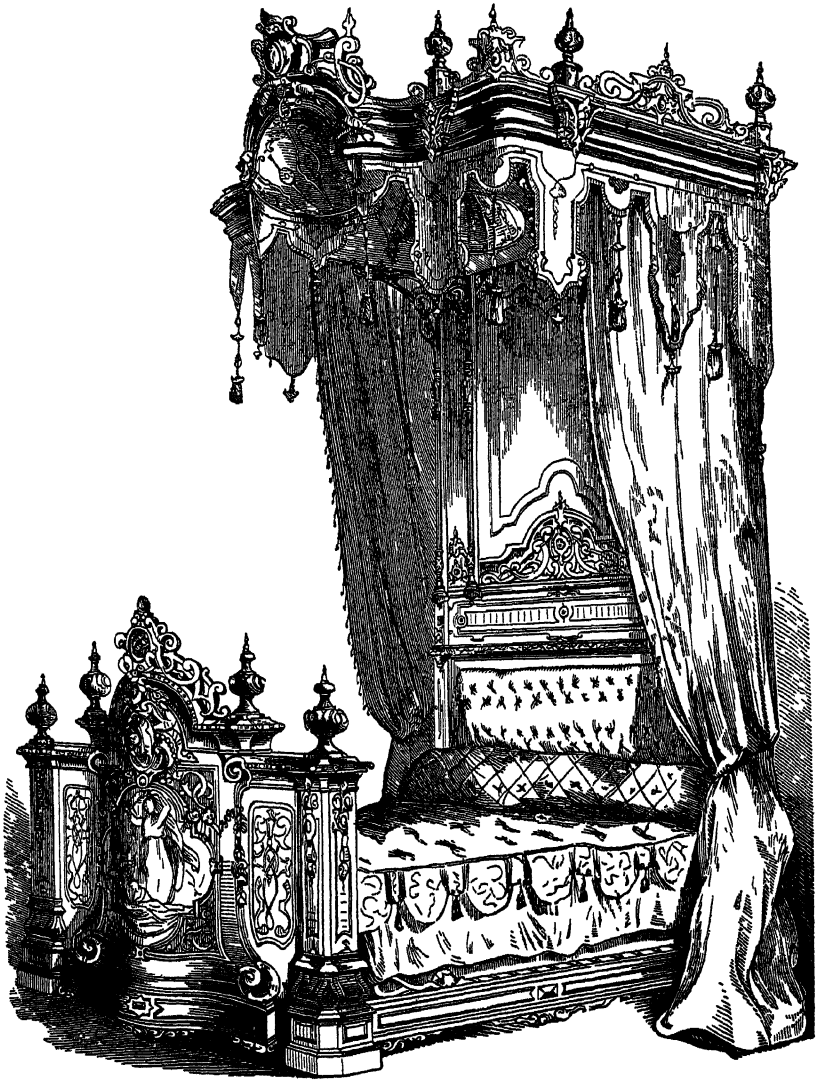
FRUIT DISHES.

Ornamented with subjects taken from English national games—cricket and archery.

(By Elkington, Mason & Co.)

labourers. As a branch of manufacture, glass lacked the prosperity and vitality which are needed for the production of really ugly stuff; that day was yet to come. On the other hand, there was still a demand for chandeliers: and it is almost impossible for a chandelier to be really bad. Being made for the purpose of refracting light, it is one of the few objects in which elaboration becomes a virtue in itself. The Victorian passion for elaboration was so to speak sublimated in the chandelier. It was Pugin who said that a man must go out of his way to make anything really bad. The Victorians were all too apt to judge the most simple objects by the amount of work put into them: they believed in going out of the way. But a man might devote the labours of a lifetime to a chandelier, and improve it all the time. In the exhibition, the larger chandeliers were hung in the gallery, one in each bay between the carpets. They made a glorious show: one in particular, by Apsley Pellatt, which hung to a length of 24 feet, was in the running for the most beautiful individual object in the building.

China, Porcelain, and Earthenware displayed the wealth of Staffordshire. Here the tradition of Wedgwood was still supreme. Flaxman was the ideal; the ornaments which came to destroy Wedgwood's purity of line were still only in small demand. The principal manufacturer was Herbert Minton, the friend of Pugin and of Cole. Minton had nearly a hundred classes of exhibits, varying from encaustic tiles, the secret of which he had regrettably re-discovered, to vases, coolers, and statuettes by John Bell. His masterpiece was a dinner-service which the Queen bought for a thousand guineas for presentation to the Emperor of Austria. Copeland exhibited chiefly porcelain statuary after Bell and Marochetti and D'Orsay, together with quantities of fine gilt and enamelled work and Parian done for the Duke of Sutherland for Trentham. Wedgwood



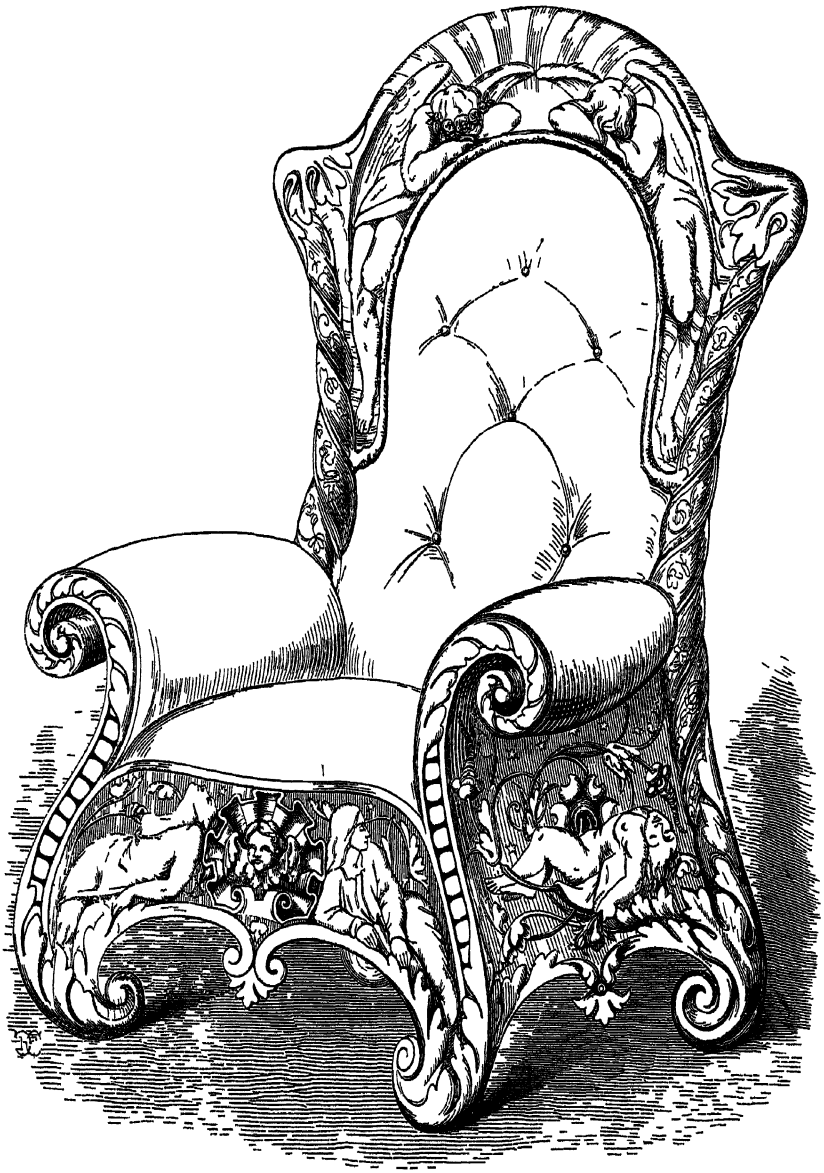
BEDSTEAD

carved in walnut wood.

(Messrs. Roger & Dear).

exhibited his famous copy of the Portland Vase, a set of chessmen by Flaxman, and many other vases, cameos and services in the true Etruscan manner. There were many porcelain busts of Shakespeare, Wellington, and others ; china reproductions of bad pictures ; Jenny Lind vases, and Victoria and Albert jugs. The Coalbrookdale Company, ambitious as ever, sent a dessert service in which they had attempted to recapture the Rose Dubarry colour, which even Sevres had lost.

For the Furniture there was not much to be said. Between the impeccable design of the eighteenth century and Regency and the chastening influence of the Gothic revival, there was a dreadful outburst of " popular " furniture. Popular taste always has preferred, and always will prefer the natural to the architectural, the Vimy Ridge Memorial to the Cenotaph. The " people " demand that every table should point its moral, and every chair should tell its tale. Thus by far the most popular example of Furniture was the Kenilworth Buffet. A huge old oak from Kenilworth Castle had been made into a sideboard, the panels and styles of which were carved into representations of the great Kenilworth festival at which Dudley Earl of Leicester had entertained Elizabeth in 1575. The mass of intricate historical detail, carved from a tree which had itself borne witness to the very scenes, provided such a combination of pretty thoughts as to be quite irresistible. For nature and sentiment had run riot between 1830 and 1851. The tiny sprigs of leaves that Chippendale might introduce had branched out into whole oaks and even holly trees ; his claw-and-ball feet had grown into dogs, lions, and eagles. Every table was supported on the back of some ill-used animal ; every sideboard groaned with dead game, carved in ivy-wood, bog yew, pollard oak and other favourite woods of the time. The manufacturers of Dublin excelled at this stuff, which one





THE "DAY DREAMER".

The chair is decorated at the top with two winged thoughts —the one with bird-like pinions and crowned with roses representing happy and joyous dreams, the other with leathern bat-like wings, unpleasant and troublesome ones. Behind is displayed Hope under the figure of the rising sun. . . .

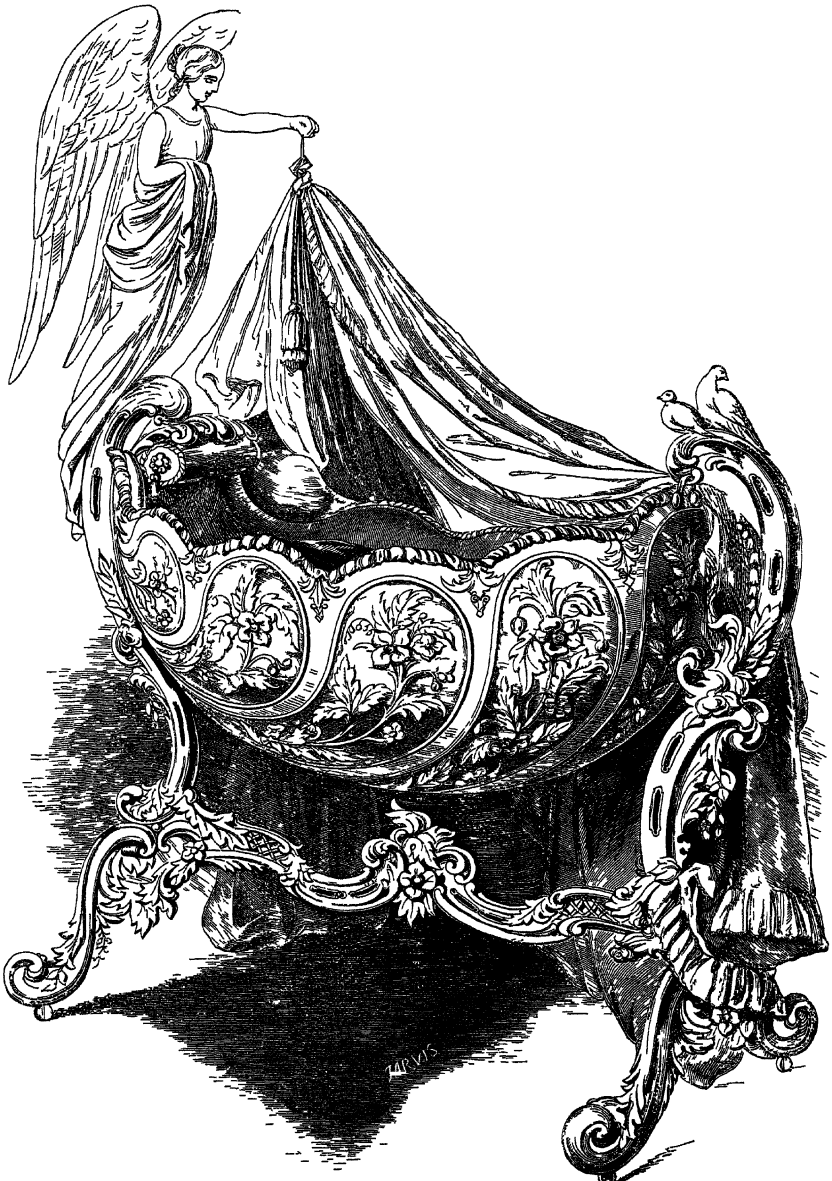
(A chair in papier-mâché by Fitz Cook).

still finds in Irish country houses. Jones of Dublin sent a fauteuil of bog yew, with the arms of Ireland and chivalric bustos of ancient Irish warriors on the back ; the arms were wolf-hounds, one recumbent and labelled " Gentle when stroked," the other sitting sharply upwards in a posture of defence and labelled " Fierce when provoked." It is even more difficult to imagine any human being in actual occupation of the " Dreamer's Chair," a riotous concoction of papier-mâché that might have been designed by Blake. Yet the cult of natural symbols was not always bad. Morant sent two circular tables made to the design of the Duchess of Sutherland, the one supported by swans, the other by storks, both of them of charming proportion and design. And in the most expensive classes of all, there were some pieces of furniture by Holland and George Trollope which preserved the architectural manner. The architecture, unfortunately, was that ponderous miscellany of styles that the Victorians loved to describe as cinque-cento, a degenerate form of the period on which Barry and Vulliamy formed their style ; but the makers of this dreary stuff were able and ready later on to turn their skill to the few masterly pieces of Victorian design.

Attached to the Furniture section was a little enclosure called the Mediæval Court. This was the handiwork of Augustus Welby Pugin. Indeed, it was almost the last undertaking of Pugin's short and stormy life. Born in 1812, the son of that admirable draftsman who did the Ackermann prints of London and put the Gothic details on to Nash's Gothic buildings, Pugin had every qualification to become a second Wyatville, a successful exploiter of the domesticated Strawberry Hill manner, which produced such admirable results in Ashridge and Donnington and Taddington. But his conversion to Catholicism had harnessed all his energy and ability to the task of bringing England back to the faith by means of a revival of true Christian art and ritual.

He built innumerable churches and some great houses; he wrote pamphlets, illustrated by a brilliant pencil; he did more than half the work for the new Houses of Parliament, Barry supplying the composition which is pure Renaissance, and Pugin adding the excellent Gothic detail. In various ways, as an eccentric, as an architect of genius, and as a spearhead of the Catholic revival, Pugin became a national figure. It was probably through Minton's influence that he got the chance of carrying his crusade into the Crystal Palace. But he was also, by fantastic coincidence, a connection of Colonel Sibthorp's, and had done some work in Lincoln itself for a renegade Father Sibthorp.

Pugin was certainly given every opportunity. Some people imagine the Victorian epoch as one protracted orgy of Gothic; but it was nothing of the sort. Till 1851 at any rate, there were three recognized forms of Gothic—the agreeable Wyatville-Nash domestic Gothic, the starvation Gothic of the Commissioners' churches, and the vigorous ecclesiological Gothic that Pugin wielded as a hammer with which to smash the Protestant mentality, identified by him with Panopticons and four-square classical meeting-houses. Apart from these, the early Victorians took their architectural pleasure over a wide field The last ten years had seen St. George's Hall and the Taylorian built in the revived Greek style, the Carlton and Conservative Clubs, the Geological Museum, much of Tunbridge Wells, Euston Station, Bridgewater House and Dorchester House in the Italian manner. There had even been a determined effort to start an Egyptian revival. Style wandered where it pleased: if there was a main current, it was the predilection for what passed as "cinque-cento." It was not until the fifties that the Gothic revival, as a secular movement, got under way. The determining factor was the Houses of Parliament. Designs were invited for plans for the new Houses to be "in the



CHILD'S COT.

(By R. W. Wingfield).

Elizabethan or Gothic styles", for no other reason than that Westminster Hall had survived the fire of 1834. Barry won the competition; but he paid Pugin no less than four hundred guineas for his help with the winning design. Barry provided a magnificent plan and great practical ability: Pugin provided the detail and the craftsmanship. But another man arose on the shoulders of them both, a man who joined Pugin's energy to Barry's worldliness. Gilbert Scott could work in the classic manner when it suited his book, as the Foreign Office bears witness: but it was he who carried the destroying flame of Pugin's ecclesiological romanticism into the remotest country churches of Protestant England. Scott was still at the outset of his career. He was now in charge of the restoration of Ely Cathedral, from the roof of which, would to God that he and not Vulliamy had fallen. He was represented in the Crystal Palace only by a model of his winning design for the Church of St. Nicholas at Hamburg. Apart from this, the only trace of what was in store could be found in some stained glass horrors in the gallery. And though the "Stones of Venice" was published in the same month as the opening of the exhibition, the wildest visionary could not yet foresee that soon the Gothic and the Italian would be joined together in unnatural wedlock, to cover the face of the land with their monstrous offspring.

Pugin created his Mediæval Court with the help of the devoted band of craftsmen whom he had gathered round him in the building of his many churches and in his work at Westminster. They were a strange assortment of men, but they had learnt to work together with a truly mediæval enthusiasm and co-operation. There was Minton, the successful magnate of the Potteries, and John Hardman of Birmingham, whom Pugin had educated in the minutest detail of ecclesiastical furniture; there was Crace, the lavish and fashionable decorator of Wigmore Street, and George Myers, a small builder whom

Pugin invariably employed. These men adored Pugin, and understood exactly his ideals. In the Mediæval Court he was not able to produce the wholly propagandist effect that he loved to envisage —"albs hanging in the oaken aumbries," and "cope chests filled with orphreyed baudekins"; with "pix and pax and chrismatory, and thurible and cross." Yet amid the depressingly secular and utilitarian atmosphere of Paxton's palace—how Pugin must have admired and hated it—he did create a rich and colourful evocation of the mediæval life he hoped to spread all over England. There were rich jewels for the Catholic lady, stately Gothic furniture for the Catholic lord, monumental brasses for the commemoration of the brave and the charitable, encaustic tiles with the arms of a Catholic bishop. And there were gorgeous fonts and roods and altars. The materials possessed that horrible quality of permanence at which Pugin always aimed because his ideals were timeless; the brass, the tile, the stained glass that never grows old. But the design was impeccable: it was not Gothic, as Scott's crude facility was Gothic; it was simply what it professed to be, the Mediæval style, a style imbued with simple chivalry and charity and devotion and learning.

Who knows what Pugin's influence on English life might not have been? He was still young, and he was doing the work of ten ordinary men. He was famous, and in high favour. He was a Fine Arts Commissioner for the Exhibition, and at its conclusion he was one of the committee appointed by the Government to choose a collection for purchase as permanent models of design. But enthusiasm and overwork had burned him out. Within a few months he was in a mad-house, and within a year he was dead. Protestant architects took over the benefit of his researches and his propaganda, but there was no one to capture his inspiration.

From the Mediæval Court it was an abrupt transition to the Fine Arts Court, which housed the fourth and last division of the British exhibits. The Commissioners having wisely decided to exclude all paintings from the exhibition, on the grounds that they were already well provided for in the Academy, the Fine Arts consisted of trivialities interspersed with a mass of sculpture. And such sculpture ; sculpture Biblical, Shakespearean, Miltonic, loyal and royal, sentimental, whimsical. Sculpture by the ton, but not one single piece of good sculpture. One of the distinguishing features of sculpture as opposed to other arts is that when it is bad it is appalling. Butterfield's worst buildings have a certain power, a certain evil fascination ; the worst Victorian paintings have merits of composition and colour ; but Victorian sculpture can only be said to make the flesh creep. In the choice of subject, it outraged taste by its mawkish lack of reticence ; while on the technical side it was almost dead. There were several equestrian and other statues of the Queen, which occupied the places of honour. Even the features of the Duke of Wellington were not brought to life. There was an abundance of life-size statues, of the Duke of Rutland, the Marquis of Bute, and other potentates ; the hand of Baron Marochetti was heavy upon the west avenue. But, with the exception of D'Orsay's flattering little portrait-statuettes, there was no single piece of statuary that one would expect to see to-day outside of Osborne. Perhaps the worst absurdity was a colossal statue by Watson of Lord Eldon and his brother Lord Stowell seated side by side in their judicial robes, carved from a single block of twenty tons of marble.

And so we finish the British section : only the colonies lie between us and the foreign exhibits in the eastern nave. But nobody who can remember Wembley will want to linger long over Antigua, Canada, Jamaica, New Zealand, St. Kitts', Van Diemen's Land, or even over



UNA AND THE LION

to which the title PURITY is given. It is a highly poetical work.

(By J. Bell).

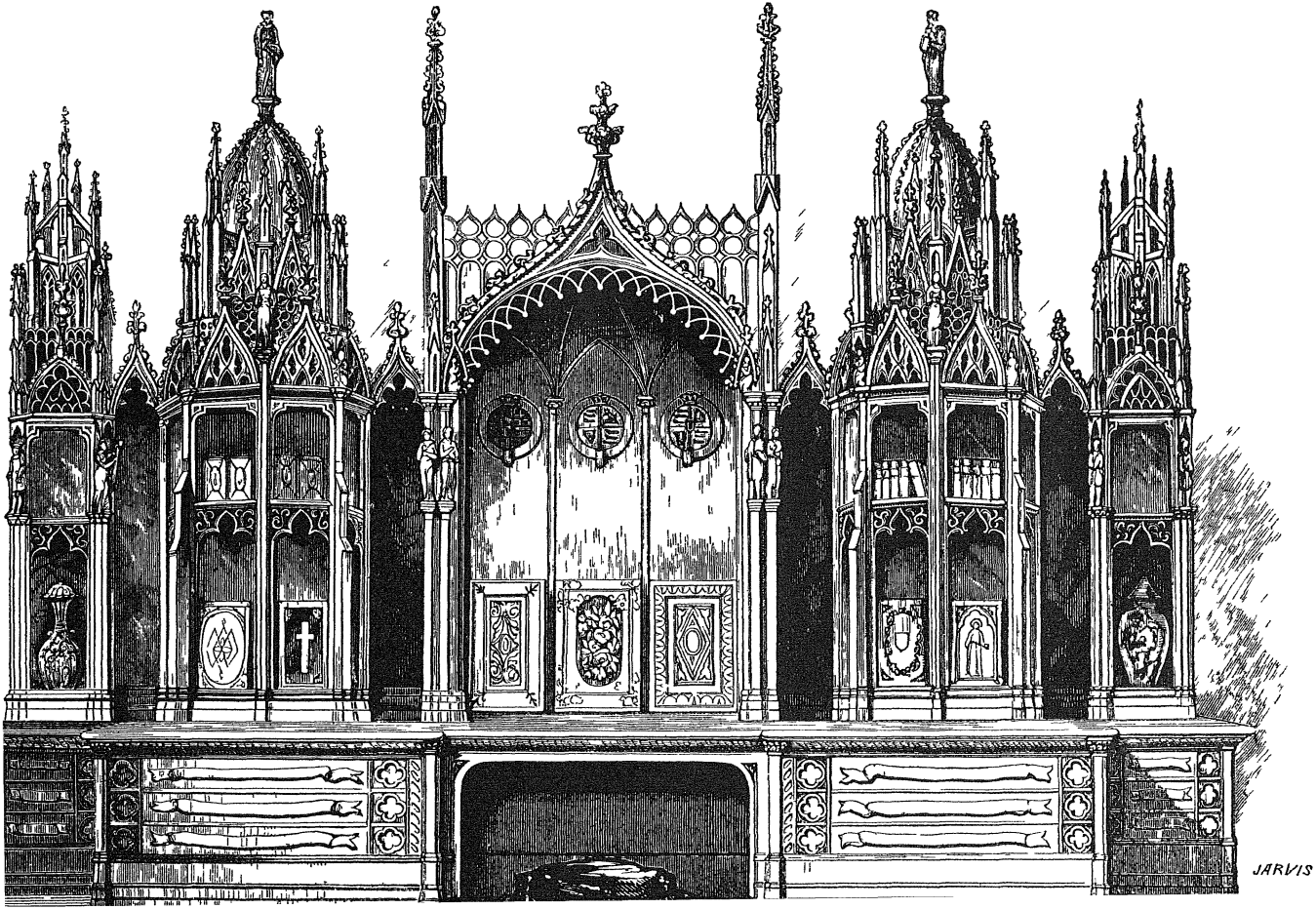
the immense display of the East India Company. To our great grandfathers, the Indian section was half the fun of the whole show ; they pored and gloated over the objects of brass and bamboo that had taken fifty years to make. To-day, when the art and wisdom of the East command a less unquestioning respect, they would be spread in vain before our eyes. But a pretty story attaches to one of the Indian exhibits. The little Prince of Wales was a frequent visitor to the exhibition ; and when surveying a dreary collection of Indian models of spinners and washerwomen and village watchmen, his eye chanced to light upon some figures of Thugs, who were represented in the act of doing their stuff with equal gusto and finesse. The Prince was enchanted. Thuggee, he decided, was the only thing. His enthusiasm was candidly set out in a dreadful sort of letter-diary that he was compelled to write to dear Baron Stockmar. But the wretched youth was to be reprimanded even for this small spark of juvenile enthusiasm. Stockmar's reply was full of horrified reproach, that the education of a Christian should allow him to take an interest in the barbarities of former times. Such were the methods by which Edward the Seventh was brought to manhood.

Foreign Contributions

THE foreign nave is going to take considerably less of our time than the British ; but to begin with it is going to offer two geographical surprises. Germany, politically, does not exist. Austria, on the other hand, extends from Venice and Milan in the south-west to Prague, Cracow, Lwow, and Budapest in the north and east. Austria was in fact the richest country on the Continent both in natural resources and in talent. Vienna, which is now a millstone round the neck of a small peasant state, was then the capital of five of the most favoured territories on earth. The Austrian exhibits were second only to the British in their variety and excellence : but we need hardly tread the same ground again. Two exhibits only are of outstanding interest. The first, which appears among a quantity of sculpture of the Milanese school, is the work of Monti. This artist exhibited a " Veiled Vestal " (who was holding a bouquet of artificial flowers) and a " Veiled Slave in the Market ", in both of which he had carried off a remarkable visual trick. The main lines of a hanging veil stood out in ordinary relief ; between them the features of a face were so roughly incised as to appear with the dimness of a veiled face. In any subdued light the optical illusion was perfect ; to within a yard away, the spectator seemed to be looking at two distinct surfaces, cut in a non-transparent material. Though it had been done before by Corradini, it was a

remarkable feat of craftsmanship, if abominable as art. The other most interesting exhibit was a suite of five rooms furnished by Leistler of Vienna, the grandest and most expensive interior decorator of the day. Leistler's furniture was so large that in spite of the same aimless ornamentation which disfigured the English furniture, it achieved great dignity There was a zebrawood dining-room for forty persons; a drawing-room and ante-room filled with elaborate and splendid tables of rosewood, walnut and ormolu, and sofas richly hung with golden fringe. There were oak inlaid floors and heavy mahogany doors. In the bedroom were a Gothic *prie-Dieu*, and a vast state bed of degenerate Baroque in locust-tree wood with gold and crimson hangings The library contained a Gothic bookcase presented to Queen Victoria by the Emperor of Austria It was an immense and noble object, domed, fretted, and pinnacled: the space for books, which was very small, was filled with priceless examples of Gothic bindings. Near by a small fountain played eau-de-Cologne. In short, the richness and grandeur of Leistler's exhibits probably did more to impress the British public with the resources of the Austrian Empire than all the samples of coal and wheat that abounded in the adjoining courts and galleries

By 1851, the greater part of Germany was already brought within the Prussian Customs Union, and in the Exhibition the Zollverein entirely eclipsed the still autonomous states. The Prussian section was dominated by a colossal group of sculpture in bronzed zinc by Professor Kiss of Berlin, called the Amazon Towering above the encircling crowds, this work was much admired by Queen Victoria on the opening day. It depicted a stalwart female bareback upon a high-bred horse; a tiger has sprung and flattened itself against the horse's neck, and the Amazon, while gripping the horse's mane in one hand, has raised her spear in the other and is taking aim at


JARVIS



GOTHIC BOOKCASE

in carved oak, presented to the Queen by the Emperor of Austria.

(Made by Carl Leistler, of Vienna, from a design by B. Bernardis and J. Kraner).

the tiger's forehead. Artistically it was a cumbersome representation of an incident hysterically conceived; but as an example of swift motion and furious exertion captured and enlarged to monumental scale, it has probably never had a superior. Apart from this immensely popular exhibit, the Prussian section was largely technical. There was some admirable Gothic furniture in cast bronze from the foundries of Graf Stolberg-Werningerode; Siemen's early electric telegraphs; a six-pounder by Krupp, "a manufacturer of Essen"; amber goods from East Prussia; the usual toy soldiers from Berlin; and a terrible new musical instrument, which filled the whole building with its vibrant bellowing, called the Sommerophone after Herr Sommer its inventor.

From Munich there came one of the four very bad colossal bronze lions by Ferdinand Muller recently erected in front of the Wittelsbacher Palace. Another Bavarian exhibit was china from the Nymphenburg factory, designed in that exquisitely sentimental, rustic baroque which has always been the national style of Bavaria. Saxony also sent Dresden china in which the eighteenth-century models had been followed with few alterations. But the most popular exhibit —almost the most popular in the whole building—came from the little duchy of Saxe-Coburg-Gotha. It was a plastic tableau of a rural fête at Rosenau, "the country palace of the Duke of Saxe-Coburg-Gotha, the residence of H.M. the Queen when on a visit to the Duke, and the place where H.R.H. Prince Albert was born." It was an attractive sixteenth-century German country house, with stepped gables and wide shutters; but to the loyal crowds who gazed upon it, it was the very embodiment of romance, and to Queen Victoria herself it was the gate of paradise. The Rosenau may, in fact, be said to have had a considerable influence on architectural style. Prince Albert blended the memory of his birthplace with the

architectural mannerisms of the Waverley novels to produce Balmoral's baronial medley: and the ramifications of Balmoral were second only to the ramifications of the *Stones of Venice*. Italian Gothic and Heidelberg baronial were to fight a long and sanguinary civil war all over England: and if the former was left in undisputed control of outer London, most of our maritime towns remain a monument to the victories of the latter.

As for the Duke of Saxe-Coburg-Gotha, the owner of the place, nobody cared a rap for him. Poor Duke Ernst; how few of those who gaped at Prince Albert's birthplace even knew the name of Prince Albert's elder brother. Ernst had always played second fiddle from their childhood days; and the relationship between them is well brought out in Mr. Hector Bolitho's volume of Albert's letters to Ernst, the publication of which has dealt a grievous blow to the Prince Consort's reputation. Not even his relations with his son were as unattractive as Albert's relations with his brother. Sentimentally, he was devotedly fond of Ernst; but intellectually and morally he was ashamed of him. In his letters he alternately castigates and coaxes; but the effect is only to throw his own merits into stronger relief. Ernst was a bit of a hedonist; as ruler of a very unimportant duchy, he found that time lay heavy on his hands. So Albert must needs complain the whole time how overworked he is, and invite his brother's sympathy to aid him in the task of shouldering the cares of the British Empire. Ernst was a gallant youth, and sustained an awkward but not unknown misfortune as the result of his amours: Albert is sufficiently shocked to forbid him to come to London, but not shocked enough to refuse to visit him at Coburg. Later Ernst married but was childless: Albert informs him with regularity and relish of the perpetual additions to his own family. Ernst was always hard up: but Albert, who was contriving to build

Osborne and Balmoral and to save money out of his wife's civil list, can only spare a lecture on improvidence for his dear brother. And now Albert was taking the bow before all the world for this vast international enterprise : while Ernst was represented in a remote corner of the Zollverein department by some fruit stones which he had carved with a penknife into rabbits and other shapes.

Another German potentate who had little cause to love Prince Albert was the King of Hanover. This extraordinary man was the son of George III and the uncle of Queen Victoria. For nearly seventy years he had been known and detested in England as the Duke of Cumberland, an able and extreme Tory whose dominance over George IV was complete. At the death of William IV he succeeded, according to the Salic law, to the throne of Hanover. In Hanover he was a completely successful and completely autocratic king : but Hanover was only a consolation prize. He felt himself more than worthy of the throne of England. The birth and survival of Queen Victoria had always seemed to be a personal affront to him : before her accession, he was generally suspected of a design upon her life, and since then, their relations had been embittered by her detention of some Crown Jewels to which he was entitled. It was bad enough to be cut out of the throne of England by a slip of a girl ; but that she should proceed to marry that prig from Coburg and to have children by him almost every year, was perfectly unbearable. The King contrived to pick a quarrel with Prince Albert about precedence, which actually came to blows in St. George's Chapel. On that occasion the Prince prevailed : but later the King scored heavily. He had suggested going for a walk from Buckingham Palace : Prince Albert objected that they would be molested by the crowd if they did. " Oh never mind," said the King, " I was once quite as unpopular as you are, and they never bothered me."

Of all Prince Albert's priggish and conceited ideas, the King of Hanover considered that the exhibition was the worst. His letters to Lord Strangford devote almost as much attention to this topic as to the twin menaces of Jews and Papists. The exhibition would be the death of English trade, and a rallying-point for all the disaffected elements of Europe. For his own part nothing would induce him to set foot inside it: he would sooner retire to his little cottage at Kew. We may imagine that those of his subjects who wished to send their goods to the exhibition found little encouragement from his officials. In fact there were only ten exhibits in all from Hanover, though one of them was the Morse telegraph. The old King died a month after the closing of the exhibition During his short reign, he had put up a stout and courageous resistance to the continual aggrandisement of Prussia. He had kept his country out of the Zollverein to the end: within a few weeks of his death, Hanover also succumbed.

Apart from Hanover, only the Mecklenburgs, Nuremburg, and the Hanseatic cities of Hamburg, Lubeck, and Bremen maintained their ancient independence. They were poorly represented in the exhibition; though one striking object from Hamburg was a suite of stag-horn furniture, which consisted of sofas, chairs and so forth actually bristling with horns in all directions, disposed with an equal disregard for symmetry and safety. Indeed, the utter improbability of some of these baronial excesses gave them the same sort of charm as other people have found in tea services made of fur.

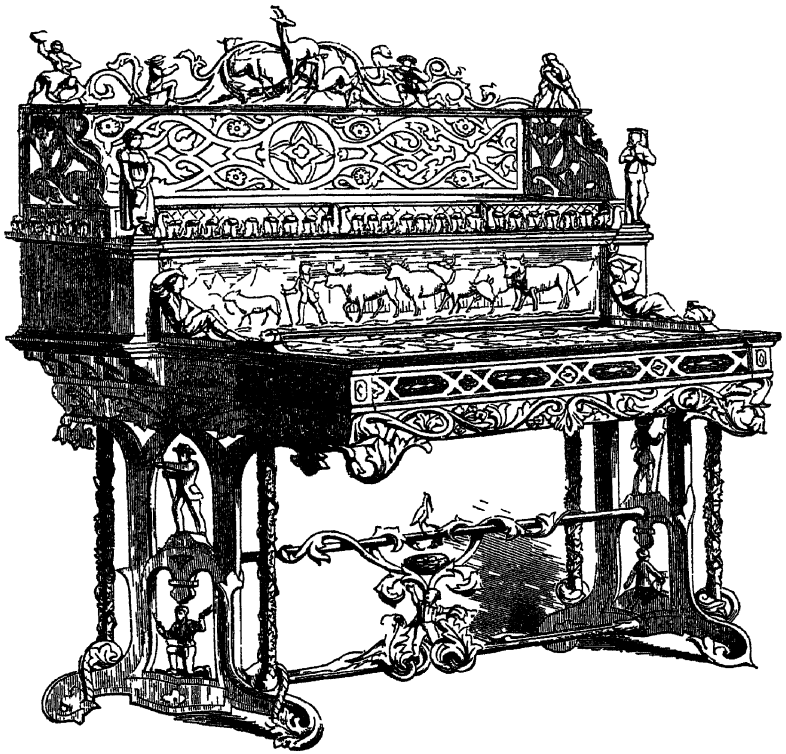
The Netherlands section was of a dullness unrelieved. The Belgian section was of a dullness relieved only by the badness of some of the sculpture. One Eugène Simonis had sent a plaster cast of his colossal equestrian statue of Godfrey of Bouillon, which was the worst piece of sculpture in the building, a work which entirely

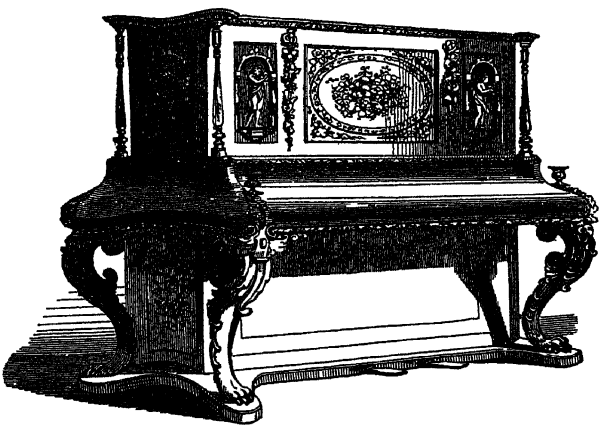


GROUP OF STUFFED FROGS
(from Wurtemberg).

lacked either the life which distinguished Kiss's Amazon or the grandeur that saved Wyatt's equestrian statue of the Queen. As if to demonstrate that he could be as horrifying in *genre* as in monumental work, Simonis supported this monstrosity with two marble statuettes of the Happy and the Unhappy child. These in turn were kept company by the "Lion in Love," by Geefs . . .

The French section was enormous and impressive. The French still excelled us in almost every branch of manufacture. In the industries connected with steam and shipping, England had a considerable lead; and our export trade was reacting vigorously to the free import of corn. But France was still the home of the manufacturing arts. French taste is often happy, but never very sure; and the same aimless roaming among the fifteenth and sixteenth centuries had followed the Empire in France as had followed the Regency in England. The glamour of the Orient had laid its heavy hand on French as on English design; and the popular demand for sentiment and moral tone was quite as strong. But still the French workman was better than the English; the long tradition of government patronage had come down ever since the time of Colbert, and had by no means spent its force Beauvais, Gobelins, Sèvres, and Aubusson were all State manufactories Their carpets, tapestry and porcelain set a standard which was hard enough for private industrialists to maintain in a time of prosperity, and quite impossible at a time when the pace of competition and innovation was suicidal, and taste was lost in a maze of historical misconceptions. Really good "art-manufacture," as the Society of Arts called it, must always depend, as really good opera must depend, on royal or national support. A Wedgwood may come now and again to make beauty pay; but the financial backing of the State, and the example that it sets to rival manufacturers, are indispensable to a







ESCRITOIRE

. . . so constructed that it may be used at pleasure for a writing-table in a sitting or standing posture.

(In white wood by Wettli of Berne).

ALLISON'S COTTAGE PIANO.

long tradition. There were good china from Stoke and good carpets from Kidderminster in the British section : but the British manufacturers hung their heads before the names of Sèvres and Aubusson.

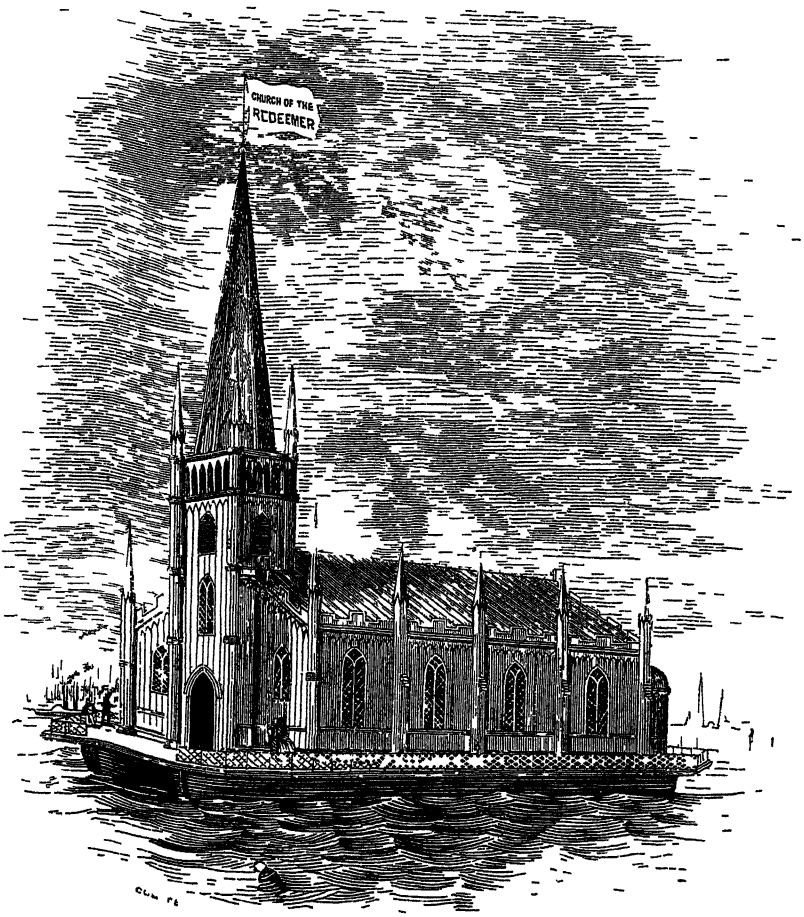
It was a new sensation for these confident gentlemen from the north of England to be compelled to admit the superiority of the French exhibits. One or two of the broader type such as Minton might have attended the Paris Exposition ; but the majority had wrapped themselves in a comfortable insularity, which had been only fortified by the many revolutions France had undergone in the last half-century. Frogs, it is true, were entirely missing from the French section ; though one exhibitor was tactless enough to show a number of the traditional wooden shoes. But the superiority of the more expensive French goods was to shatter many insular complacencies. Nor were the fears of the British exhibitors allayed by the fact that their French rivals entirely disregarded the rules of the exhibition against price-marking and touting.

Entering the French section, then, we shall find a total contrast to the muddled and uninformative methods of the British. Every stall was laid out with a skill born of long experience of exhibitions ; every stall had its attendant, eager to explain and still more eager to sell. And the British public responded generously. They were enchanted by Duvelleroy's beautiful fans, and Constantin's artificial flowers in cambric ; they sat and listened all day to performances on Erard's pianos. They admired the Queen of Spain's jewels by Lemonnier (though these, splendid as they were, fell short of Hunt & Roskell's jewels) ; they marvelled at the heavily jewelled silver-gilt dressing-table given to the Duchess of Parma as a wedding-present by the Legitimists, and at a monstrous edifice of gold which turned out to be a tea-service of twenty-seven pieces perched on a massive centre-piece. In fact, the only object among nearly two thousand

French exhibits that was not generally admired was a statue of Queen Victoria, eighteen feet high, in zinc, a material which seems latterly to have suffered a fortunate neglect as a medium for sculpture.

Switzerland missed many opportunities, for it was the very period of the Swiss Cottage, and peasant furniture was actually in vogue: but there was nothing of interest here except watches and clocks and musical boxes From the Papal States and Tuscany there were excellent mosaics and cameos and vases of alabaster and scagliola. You might be surprised at first to see that Sardinia had sent a town carriage to be shown in London; but you would have forgotten that Turin and Genoa and Nice were tributaries of that forgotten kingdom. Portugal and Spain made the mistake of overdoing their raw materials: tons of copper, kegs of snuff, and bushels of olives repelled the visitors Portugal was distinguished by an incredibly bad ivory figure of Prometheus, attached to his rock by a padlock of modern design. The most interesting Spanish exhibits were from the Royal Ordnance at Toledo—richly ornamented pistols and damascened swords of the ice-brook's temper, one of which was so fine that it folded into a circular scabbard but drew out as straight as the day it was made.

From Norway there was almost nothing: from Sweden the fine iron and steel of Eskilstuna and porphyry worked like a precious metal; from Denmark, vases and Thorwaldsen reproductions by the Royal Porcelain Manufactory at Copenhagen The Russian exhibits did not arrive until a few weeks after the opening of the exhibition, having been ice-bound all the early spring. They consisted mostly of precious metals, some of them of very striking character. From the Imperial mines and the mines of Count Demidoff there were gold and silver and platinum; from his copper mines, Count Demidoff also sent some enormous objects of malachite—doors



C.P.



FLOATING CHURCH FOR SEAMEN.

This neat edifice now floats on the waters of the Delaware. The superstructure is firmly fastened on two of the New York clipper-ships . . . of about 90 tons each. The exterior is painted to represent brown stone. . . . There is a large stained glass window at the east end with different devices. . . . On either side of the chancel is a bishop's and priest's chair, all of black walnut.

(Clement L. Dennington, New York).

and chimney-pieces and vases sixteen feet high in Chinese and Rococo designs. Malachite is a carbonate of copper, which is subsequently veneered on to a core of copper by skilled craftsmen. To the Victorians, who were very apt to judge of beauty by the amount of labour that had gone to its making, malachite offered an irresistible appeal. One of the largest malachite vases now stands occupying almost the whole of one of the bow windows that overlook the terrace at Windsor. There was also an entire suite of malachite furniture ; there were clocks and other things in malachite and ormolu. There were jasper vases ; there were vases of monstrous size from the Imperial China Manufactory at St. Petersburg. The Russian jewels, by Bolin, were the finest in the exhibition, both in design and quality ; while Sazikoff of Moscow and Chopin of St. Petersburg exhibited several splendid and fantastic objects of gold and silver and bronze, of which the best was possibly a clock, five feet high, representing the first balloon ascending through a dense pile of cloud, to be welcomed by a congregation of cherubs, the largest of whom denoted the hours of the day by pointing to an orifice in the fabric of the balloon. And a cloak of silver fox belonging to the Tsar, and valued at £3,500, was also much admired.

After the imperial affluence of Russia, the exhibits of Persia, Turkey, Greece and Egypt seemed mean enough. From Tunis there was only one exhibitor, the Bey of Tunis, but he scored a great hit. The rule that no prices were to be marked on the exhibits meant nothing to his good Mahometan mind ; and he imagined that he was sending his wares to a great and glorious bazaar. A bay of the building was fitted up as a Tunisian shop, where a grave and courteous Tunisian haggled all day with delighted girls over the price of dirty calabashes and carpets.

China was not in time to send anything to the exhibition direct :

but a number of collectors and merchants in England had got together a fine representative array of teas and silks, porcelain and lacquer, ivories and lethal weapons. Japan, of course, was not represented at all, having not yet emerged from that impenetrable seclusion from which it pleased God in His wisdom to call her two years later.

The exhibits of the United States were mostly utilitarian in nature. There were several exhibits of the wonderful new material, india-rubber, for which innumerable uses were being found ; and already we find the Goodyear Rubber Company in the field. Another far-sighted gentleman was A. Asher of New Orleans, who sent a machine for manufacturing ice through the agency of sulphuric acid. Samuel Colt sent the first revolver, or rather the first in which the chamber and not the barrels revolved—an exhibit which caused a sensation among the military. There were some very fine " sulkies " with their harness for trotting, which was then the national sport of New England. There was a model of a floating church, painted to resemble brownstone, in the Gothic style, complete with stained-glass windows and spire ; this had actually been built by the Churchman's Missionary Association of Philadelphia, and was plying among the shipping in the Delaware. There was a " piano-violino ", in which three bows were made to scrape over a fixed violin in unison with the notes of the piano.

But the most popular of the American exhibits, indeed, almost the most popular exhibit in the building, was a statue by Hiram Power called the Greek Slave.

> The figure here represented [said the blurb] is intended for that of a young and beautiful Greek girl, deprived of her clothing and exposed for sale to some wealthy eastern barbarian, before whom she is supposed to stand, with an expression of scornful dejection mingled with shame and disgust. Her dress, which is the modern Greek costume, appears on the column, and the cross implies her religion



THE GREEK SLAVE.



THE STARTLED NYMPH.



THE GREEK SLAVE.

The figure is that of a young and beautiful Greek girl, deprived of her clothes and exposed for sale to some wealthy Eastern barbarian, before whom she is supposed to stand with an expression of scornful dejection, mingled with shame and disgust. . . .

(By Hiram Power).

THE STARTLED NYMPH

"exhibits none of the meretricious coyness and other objectionable characteristics of 'The Greek Slave.' The figure is cast in a good wholesome mould; the attitude graceful and animated, without affectation; the flesh soft and smooth; and the general finish of the work in every respect satisfactory."

(A contemporary critic.)

(By Behnes).

> and country. The chains on her wrist are not historical, but have been added as necessary accessories.

Chains, for the matter of that, appeared to be a "necessary accessory" of half the sculpture of the period; what with Mazeppa, Prometheus, San Sebastian, Andromeda, Circassian slaves, veiled slaves, and Greek slaves, it was a fortunate minority among the objects of statuary who had the free use of their limbs. But the Greek Slave really went beyond the limits of taste. It represents perhaps the worst example of artistic story-telling. Poor Christian girl—wicked wealthy barbarian—scornful dejection: all the ingredients of a lovely little tale were there. But it bore as much relation to the Venus de Medici, from which the figure had been very obviously studied, as Sophoclean tragedy bears to the drama of the lascivious mortgagee.

With the Greek Slave, we may appropriately take our leave of the Crystal Palace. The work of an American sculptor in Rome, imitative in design, meretricious in execution, and deliberately titivating in its sentiment, it represented and embodied the two supreme shortcomings of the period—its vulgarity and its eclecticism. The possibility of the appreciation of fine arts had spread downwards to the middle classes; and the middle classes had gone bald-headed for all the artistic fallacies—nature, pathos, and moral purpose. But we need not for all that despise the early Victorians. Where they suffered from a surfeit of ill-digested knowledge and ill-controlled idealism, the present day shrinks in diffident self-consciousness from any form of allusiveness or didacticism. Where they were adventurous, we are cynical: where they were dogmatic and hearty, we are merely empty and apologetic. The meanness and timidity of modern design, the cult of the second-rate, attained their climacteric, let us hope, in the reign of Edward the Eighth, and found their

most characteristic expression in the postage stamp of that monarch. The reaction is due to come : and there are signs that it is coming soon. It may carry us far beyond the happy mean. From our present poverty of effort and design, we may be transported to the plethora which afflicted the 1850's. But if art is a manifestation of the enjoyment of life and the cultivation of the faculties, it is surely better to be too self-confident and too exuberant than to stand by and sneer at anyone who gives himself away at all.

The Exhibition and After

FROM start to finish, the exhibition was a roaring success. It was open for one hundred and forty days, and just over six million people visited it. It attracted an incalculable number of foreign visitors, and cheap excursions from all over the British Isles enabled the whole of the more deserving poor to enrich their minds with its varied treasures. Almost all the schools in the southern half of England were brought up to see it, and one old woman of eighty-four walked all the way from Cornwall. The charges for admission were steadily lowered from a pound to a shilling, with five-shilling and half-crown days in each week; but though it became apparent at the start that the expenses of the exhibition would be covered with a handsome margin, the Commissioners refused absolutely to go below the shilling admission. In all, they took £356,000 at the doors.

During the first three months the Queen visited the exhibition about every other day. She would come very early, and stay until after the doors opened at ten, walking quietly among the crowds to the great amazement of the foreign visitors. She worked methodically round the entire building, criticizing and encouraging, and enjoying the representations of herself as a tea-pot handle, herself as a pair of tongs, herself embroidered on the backs of gloves. She made many purchases, and accepted more presentations. Another popular

attraction was the frequent attendance of the Duke of Wellington. He would make a rendezvous in some quiet corner at some unearthly hour with a woman guest, who would arrive to find him trying to



(by kind permission of the Proprietors of *Punch*).

A Gentleman from the Country mistakes the Crystal sent by the Duke of Devonshire for the Koh-i-Noor diamond.

escape from a crowd of madly cheering schoolboys, or having his hand wrung by weeping Frenchmen. Determined to indulge his passion for the exhibition, he came again and again, slinking in by royal and secret entrances : but everybody knew that modest little figure, and every visit ended in a triumph.[1]

[1] Some of Wellington's comments on the exhibition will be found in Appendix 3.

To Benjamin Disraeli the exhibition proved to be the setting of a romance which might have come in every detail from the pages of *Lothair*. A strange lady called Mrs. Brydges Williams had been writing to him from Torquay, claiming a distant kinship with him and begging for an opportunity of meeting him : and the spot that she selected for the rendezvous was the Crystal Fountain. At first he had ignored the letters and avoided the appointments : but in the end his curiosity took him in hand. There, in the centre of the Palace, he found a very small old lady, curiously dressed, and more curious still in her manner. She had come, it seemed, to beg for his advice ; but her story was long and unintelligible. Seeing that he grew impatient, she gave him a large envelope, in which she said she had set out her difficulties. Disraeli thrust it in his pocket, and left her with relief. Weeks later, he discovered the forgotten document in his overcoat : it proved to be a perfectly sensible case for a skilled legal opinion, accompanied by a thousand-pound bank note. The lady became one of his most intimate friends : he wrote to her and visited her regularly for years. She left him thirty thousand pounds and was buried at Hughenden.

The reactions of a highly sophisticated observer are to be found in the Greville Memoirs. Charles Greville spent the 1st of May out in Hyde Park, thinking the behaviour of the masses more interesting to watch than any display of royal magnificence within the building. " Since that day ", he says, " all the world has been flocking to the Crystal Palace, and we hear nothing but expressions of wonder and admiration ". By May the 31st, " the world talks of nothing but the exhibition, and all politics have appeared flat, stale and unprofitable." On June the 8th, " there is a picture in *Punch* of the shipwrecked Government saved by the exhibition steamer, which really is historically true." M. Thiers has been over to see the exhibition.



THE SHIPWRECKED MINISTERS SAVED BY THE GREAT EXHIBITION STEAMER.

By kind permission of the Proprietors of *Punch*

> He was indefatigable while he was here, excessively amused and happy, and is gone back enchanted at his reception in the world, and full of admiration of all he saw. He was presented to the Queen at the exhibition. Hearing he was there (for he usually went early every morning like herself) she sent for him, and was very gracious, and both she and the Prince talked to him a good while.[1]

Thiers also dined with Disraeli, and was presented to Wellington by Granville.

Whatever the merits of the individual contributions may have been, the beauty of the exhibition as a whole was something overwhelming. The grandeur of Paxton's building, its rain-washed terraces alive with the flutter of flags, was enough to intoxicate a people to whom railway stations and workhouses were the staple architectural diet. But nothing could excel, nothing could prepare one for the astonishment of one's first sight of the interior. The endless avenues were filled with such a richness of colour and variety of scale that the exhibits melted into tiny components of a vast mosaic. In the gallery hung carpets and chandeliers of a size only fit for royal palaces ; in the transepts palms waved, fountains played, and statues gesticulated ; in the naves there jostled an incredible variety of objects—lighthouses and rood-screens, organs and bridges, even the bombastic Godfrey de Bouillon ; but all of them were swallowed up and harmonized by the size and perfection of the building. Even the individual sections found each an appropriate background in the non-committal pattern of girders, piers, and ridges. Whether it was the shindy of machinery in motion, or the rich melancholy of the mediæval court, or the gaudiness of the Indian tent, they blended with each other beneath, and blended with their great canopy of glass and iron.

[1] *Greville Memoirs, 1885.*



By kind permission of the Proprietors of *Punch*.

BIVOUAC IN THE PARK THE NIGHT BEFORE THE EXHIBITION.

An even lovelier spectacle was reserved for those who were privileged to enter the building by night. Moonlight streamed through the roof, gleamed on the new paint, and cast great shadows round the elms. The jewels were put away, and police officers padded among the shadows in list slippers. Here and there a gaslight told of some repair that was being carried out: but sound was swallowed up in the great space. The machinery was still, and the organs silent: only at the hours a distant babel came from the horological department.

By day, large numbers of top-hatted police-constables patrolled the courts and peered over the galleries: but their only difficult task was to get the ladies out at six o'clock. Twelve pickpockets were found in the act of stealing a total of £4 5*s.* 3*d.* Eleven persons were caught removing minor exhibits, generally of the most useless description. No cases of sedition or conspiracy came to light. Ninety pounds of false money was taken at the doors. Three women were violently assaulted by a party of Welsh abstainers. Three petticoats, two bustles, three pincushions and twelve monocles were lost and never claimed. Nobody died and only one person was born in the building: there was one outbreak of fire in the contractor's office. In the Refreshment Rooms, 934,691 Bath buns and 870,027 plain buns were washed down with 1,092,337 bottles of non-alcoholic beverage.

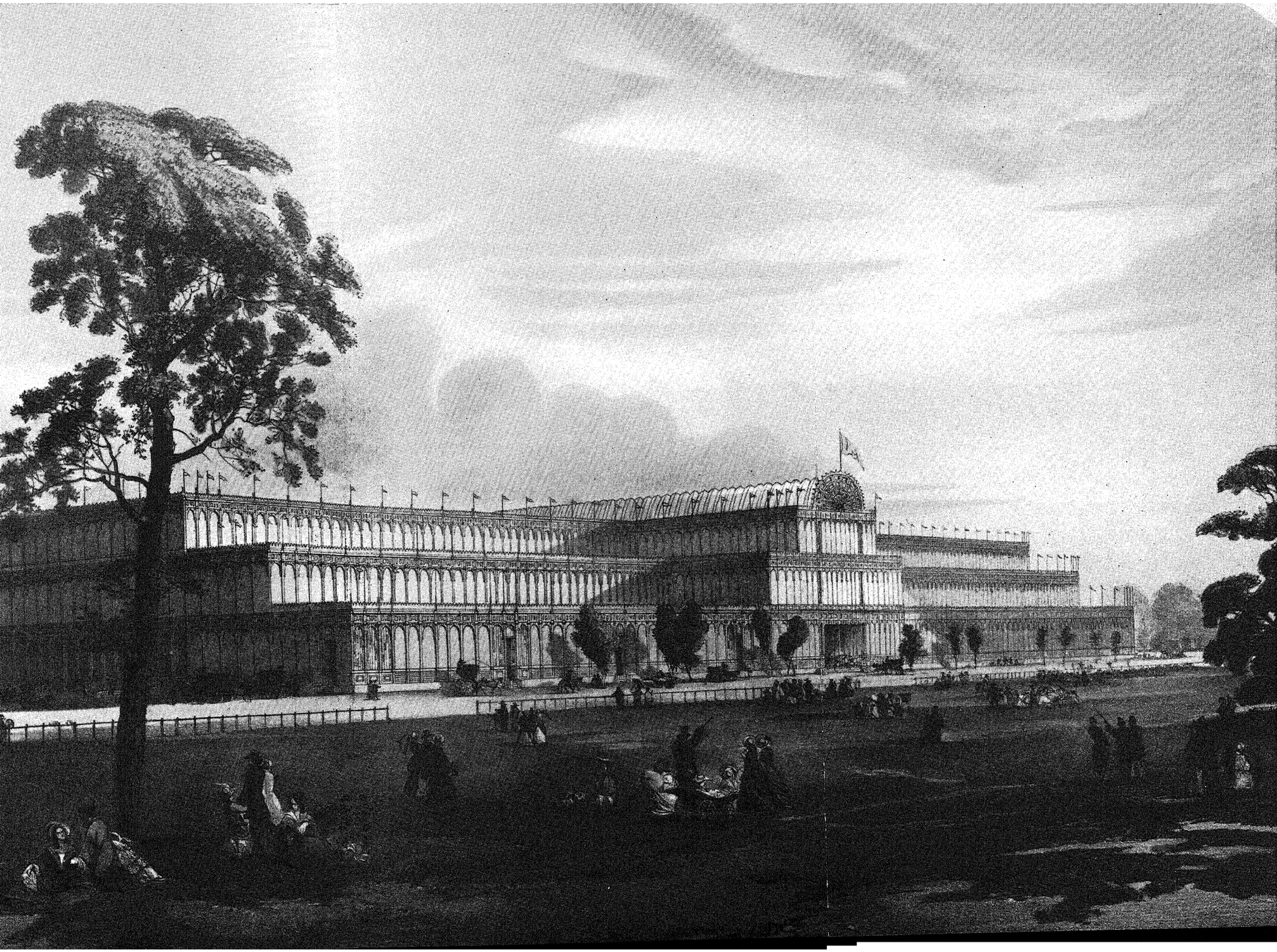
London enjoyed such a season as has never been known. Popular amusements such as the Tower of London attracted six times as many visitors as in 1850. Cab-drivers reaped a rich harvest from bewildered foreigners. Polyglot policemen were introduced to protect them, and became a tremendous joke with the Cockneys; the visitors derived equal amusement from French and German editions that were published of the *Illustrated London News*. Mr. Wyld's Globe in Leicester Square, various Dioramas and Panoramas, Hippodromes

and Balloon ascents, all benefited enormously. The " mandarin " He-Sing moored the Royal Chinese Junk Ke-Ying by Essex stairs, and humbly begged to announce music and dancing, feasts of lanterns, jugglers, firework displays, and assaults-at-arms, all for a shilling. Soyer, the great chef, took Gore House, a few hundred yards from the Crystal Palace : there he organized a Gastronomic Symposium of All Nations, and laid out the grounds in a medley of foreign styles ; he called it the *Pré d'Orsay*—curious relic of poor d'Orsay, who had lived here besieged by creditors for eight long years.

The exhibition inspired a vast literary output. There were all manner of guides in all languages. There were religious tracts which pointed the moral of each exhibit. There were scurrilous pamphlets. In verse there was Martin Tupper's Exhibition Hymn, which was on sale in thirty languages, with music by Sebastian Wesley. Mrs. Gascoyne, the authoress of *Spencer's Cross Manor House*, started off a long poem with :

I, who late sang Belgravia's charms,
Now sing the Crystal Palace.

But perhaps the oddest effusion was *The Exposition of 1851*, by Charles Babbage, which appeared before the exhibition had opened. Babbage in youth had been a mathematical prodigy. He invented a calculating machine, towards which the Government gave a grant : but the machine was never finished, and Babbage devoted the latter half of his life to the airing of two grievances—one against the blindness of Governments towards genius, and the other against organ-grinders, who had robbed him of a quarter of his working life. His book consists in part of grievances, and in part of meticulous advice as to how the exhibition should be run, even to the problem of the bestowal of wet umbrellas.



The progress of the exhibition was marked by a wonderful succession of public dinners. Dinners to Paxton and Fox; dinners to the foreign commissioners at Richmond and Woolwich, Birmingham and Liverpool. The City gave a dreary dance at the Guildhall, which was attended by the Queen. There was a great Restoration costume ball at Buckingham Palace, at which Prince Albert, in a flowing wig and gold-brocaded satin coat, contrived to look like an early Quaker escaping in disguise. The City of Paris invited the Lord Mayor and Aldermen of London and the Royal Commissioners to a week of jollifications in Paris, which developed into a broad comedy of mistaken identities, lost clothes, and burgherly *faux pas*.

Various controversies arose during the summer about the destiny of the Crystal Palace. The popular view was that it would be nothing less than a crime to remove or destroy such a glorious addition to the beauties of London. The residents in Prince's Gate objected strongly, and were again led into the fray by Lord Campbell; but Lord Listowel, their landlord, declared that his property was much enhanced by the vicinity of the Palace. Paxton once again was indiscreet. He headed a campaign in favour of converting the building into a permanent Winter Garden. *Punch* and the *Illustrated London News* published captivating illustrations of its possible conversion. Paxton was emboldened to present a petition to Parliament, and actually got Brougham himself to introduce it in the Lords. Parliament petitioned the Queen to leave the building where it was for at least another year; but the reply was circumspect. The Commissioners were solemnly pledged to the removal of the building, and it was matter for serious consideration, how, if at all, it was possible for the public to release them from their pledge. In fact, it was known that the Prince Consort strongly advocated that the building should be removed without delay. The cavalry at Knights-

bridge Barracks wanted the use of the ground ; and really, all this fuss about winter gardens was verging on frivolity. It would never do, that a great educational effort should degenerate into a public entertainment ; the Prince had no desire to go down to history as a provider of bread and circuses. So in September, notice was duly served on the contractors to remove the bauble.

The public could scarcely believe that the exhibition was really going to be closed on October 11th. The Commissioners adhered inexorably to their date ; the days were drawing in, and the visitors were rung out now at sunset instead of at six o'clock. During the last six weeks the figures of attendance soared. On October 7th, they reached 109,915. On that occasion, there was very nearly an ugly accident. The Duke of Wellington, convinced, as usual, that nobody was in the least interested in him, went to take a last look at his favourite entertainment. He was instantly spotted, a shout of cheering arose, and close on 80,000 people started running and pushing to get near him. It was very nearly the end of the Duke ; but his old legs, and the strong arms of the police, got him to the south entrance and away from the people who could never thank him enough.

October 11th, a Saturday, came and went without any ceremonial. On Monday and Tuesday the building was open to exhibitors only, and the entire royal family came on both days. On Wednesday the 15th, there was a simple closing ceremony. Rain was thundering on the transept roof ; many of the larger exhibits were gone already. The building was packed with drab frock-coated exhibitors. On the site of the crystal fountain stood a high dais of crimson cloth, and on it a long committee table. At the head of the table was the Ivory Throne from the Indian section—of all possible chairs the worst for sitting at a table. Ranged round the table, and hanging perilously on the edge of the dais, were an odd miscellany of chairs, all backs

to the spectators ; and on them were the black broadcloth posteriors of the Royal Commissioners. At twelve, the Prince came in by the south door in morning dress ; the National Anthem was played on the organ, accompanied by the choir of the Sacred Harmonic Society ; and the Prince subsided into the Ivory Throne. Lord Canning then read a report on behalf of the various juries who had distributed the awards. The Prince read a long address of thanks to the jurors on behalf of the Commissioners. Everybody sang *God Save the Queen* again. The Bishop of London prayed. The Hallelujah Chorus was sung. And the Prince departed, half an hour after he had come.

The awards of the juries were then published. There were thirty-four juries in all, carefully divided into classes and as carefully apportioned between Englishmen and foreigners as an Indian legislature is apportioned between Moslems and Hindus. These juries distributed three separate awards—a Council Medal, a Prize Medal, and an Honourable Mention. If the recipients had been selected from a hat, the distribution could not have aroused more scandal, fury and confusion. Most of the awards went to foreign exhibitors ; perhaps the most glaring absurdity was that Count Dunin's ridiculous Expanding Man got a Council medal, the highest award, in preference to Applegarth's printing-press.

Paxton, Fox and Cubitt were knighted. Paxton was awarded £5,000 : the claims of Fox & Henderson for work undertaken beyond the terms of their contract were finally adjusted at a sum of £35,000. Colonel Reid became Governor of Malta ; Dilke's conscience forbade him to accept any honour from the Crown, but the Queen presented his wife with a ruby bracelet ; Cole was made a Companion of the Bath.

As for the importance of the Great Exhibition, it had none. It did not bring international peace : it did not improve taste. Imper-

ceptibly it may have promoted free trade : a few manufacturers may have learnt a few lessons from their foreign rivals. The Russell Government and the Prince both gleaned a little popularity from it. But first and foremost it was just a glorious show. An enormous number of objects was gathered together in a singularly beautiful building, and six millions of people came to look at them. When it was over, there were two things left ; the building, and a large financial surplus. The show itself was banished from the public memory in the excitement of Kossuth's arrival in England in late October, and of the Louis Napoleon's *coup d'état* in December.

On November the 6th, 1851, the Commissioners reported to Her Majesty that they expected a surplus of £150,000 and that they desired to dispose of it by furthering the general objects of the exhibition, but that they had no power to do so. A supplementary charter was accordingly given, empowering them to dispose of the money as they thought fit ; and it will surprise some people to learn that the Commissioners as a body are still in existence, and administer a considerable fund, under the chairmanship of Lord Macmillan.

The Commissioners discharged the last of their liabilities and found themselves about £186,000 to the good. They invited suggestions as to the disposal of this money. The most sensible suggestion, made by many of the local committees, that the money they had subscribed when the exhibition was on the rocks should now be returned to them, was of course ignored. There were higher aims in view. . . . Many learned bodies thought they had an excellent claim to the money. The Royal Academy was not averse to it ; nor were the Clonmel Mechanics Institute, and the Kilkenny Literary and Scientific Institution. Suggestions for an Albert Park, a statue to Prince Albert, a country residence for Albert in Ireland, were disdained. The cause of intellect was kept resolutely in view ; and the Commissioners, having

explored every avenue and listened to every suggestion, came to the staggering conclusion that London was insufficiently provided with museums and galleries, and that their best plan was to lay out their funds in the purchase of property in order that more museums and galleries might be built. Accordingly they acquired Gore House and twenty-two acres of land for £60,000, and forty-eight acres of adjoining land from the Baron de Villars for £153,500. This more than accounted for the money at their disposal; but they had obtained a promise from the Government to contribute an equal sum to whatever they expended.

The Commissioners suggested that the Gore House end of the property facing Hyde Park—so lately so alive with Lady Blessington's parties and d'Orsay's studio—should accommodate a new National Gallery; that a Museum of Manufactures should occupy the Brompton Road end; and that the intervening space should be devoted to a building for the learned societies, with institutes of Practical Science and Practical Art at either side.

The site being cleared for the inrush of Art and Science, the next problem was how best to fill it. And here, as always when publicity ended and work began, the initiative fell once more to Henry Cole. Cole became secretary of the Government School of Design in October 1851; he immediately got a grant of £5,000 from the Treasury to purchase objects from the exhibition likely to serve as permanent models of design or taste. The Board of Trade appointed him and Owen Jones and Pugin as a commission to make such a selection. As there was no room for their purchases at Somerset House, the Queen gave leave to accommodate them at Marlborough House, where they formed what was called the Museum of Ornamental Art. In addition to these purchases, a number of "presentations" were made to the Commissioners. Exhibits to the value of £91,000,

whether because they were too good to be forgotten or too bad to be removed, were left behind in the Crystal Palace as free gifts : and as most of them were bulky, it was found convenient to dump them at Kensington Palace near by till they should find a permanent home.

The first erection on the Commissioners' seventy acres was a horrible building of brick with two great iron cupolas, at the Brompton Road end. The building was popularly attributed to Cole, but was in fact the work of a Captain Fowke, an inventor and engineer who designed many provincial art-galleries. It was known as the Brompton Boilers, and the public felt that it gave them on a small scale a fair idea of what they would have endured if the Building Committee had had their own way in 1851. Incidentally, it cost more than twice as much as the Crystal Palace. A second international exhibition was held here in 1862, but failed completely, owing principally to the fact that the Queen was in mourning for the Prince Consort.

Such was the origin of the South Kensington Museum. In 1899, Sir Aston Webb began the present building, such as it is ; it was opened in 1909 as the Victoria and Albert Museum. Around it lie its satellites : the new Science Museum and Geological Museum ; Waterhouse's Natural History Museum ; an India Museum and an Imperial Institute. Prince Albert, if his spirit ever walks in Exhibition Road, may feel that he has wrought better than he knew. Here, on these barren acres, nobody lives, nobody loves, nobody dies. Here, on the one side, are all the trumpery flotsam of learning, stuffed mammals and fossils, stuck into glass cases and labelled in the hope of filling some vacant mind. And here, on the other side, are some of the loveliest things on earth, whole rooms of English furniture, and the Raphael cartoons, and Pellé's bust of Charles the Second—here they are, snatched from the hands of private men, sterilized, caged together in tasteless surfeit, imprisoned without hope of release. Here too,



THE CRYSTAL PALACE FROM THE AIR

by Fox Photos Ltd.



perhaps saddest of all, is a great staff of experts—unhappy custodians, bound by hated necessity to the prisoners of their great seraglio, yet pleased with a gloating pleasure that other men cannot get near them to enjoy them. From beyond their glass cages a few German and Japanese students of all ages come and blink through their spectacles at them and go away again, having added one more piece of information to the silly pile. Domestic servants make assignations among the period panelled rooms. And on Bank Holiday, when it is wet outside, quite a lot of people go.

But though all this money went on the cult of the dead, the Palace itself was saved for nearly a century of uproarious life. The fate of the Hyde Park site was ultimately decided on April the 29th, 1852, when the House of Commons decided that the Commissioners had no option but to honour their undertaking to clear it.[1] They were considerably influenced in this decision by the known opinion of Prince Albert that the Commissioners would not be justified in devoting any part of the surplus to the upkeep of any sort of place of amusement. But Paxton had already made his plans, by which he hoped to save the building for the benefit of the public, without calling upon the Government for aid. On May 18th there appeared the prospectus of a public company which was to take over and rebuild and run the Crystal Palace on a capital of half a million. The chairman was one Samuel Lang; Paxton, Fuller, Scott Russell, and Digby Wyatt were among the directors.

[1] Colonel Sibthorp surpassed himself in this debate. The thing had been a transparent humbug, a palace of tomfoolery, stuffed with foreign fancy rubbish: the poor had been trepanned, seduced, ensnared and humbugged out of their hard earnings. He hotly denied that he had visited the place: not for a thousand guineas would he enter it: the sight of it made him sick. Objects had been photographed on the Sabbath; and Mrs. Hicks had been turned out of her sweetmeat kiosk.

The Crystal Palace Company secured a property of 349 acres, comprising the summit and east slope of Sydenham Hill, for a sum of £167,000. It was the highest spot in the southern vicinity of London, and consisted at that time of well wooded parkland. Paxton proposed to re-erect his palace at the very highest point of the hill, where it would command a magnificent view over Surrey and Kent, and be in itself a landmark from all over London. He contracted with Fox & Henderson to bring the building from Hyde Park and reconstruct it on this admirable site. But here his troubles began. Paxton's training at Chatsworth had not inculcated in him the virtues of economy. He was a man of spacious and sweeping ideas. His fountains and conservatories had made considerable inroads upon even the Duke of Devonshire's fortune : but he had been able to repair them by his astute handling of railway and property values. But over the Crystal Palace his sense of proportion went astray. He had become a great popular lion ; and now the public had entrusted him with the virtual control of half a million of money, to do as he pleased with his masterpiece. The site he had acquired was almost too good to be true. It would be mean and unworthy not to make certain alterations that he had always wanted to make in his original building. To begin with, the site sloped so steeply to the east that a basement storey was obviously required. Then it would be far pleasanter to have an arched roof the whole length of the building. But if this was done, there must still be a raised central feature : so that the central transept must spring from the summit of the arched roof of the nave. This meant an additional two stories ; and that in turn meant that the transept had to be nearly doubled in width to preserve the original proportions. That made the central transept by itself too large for the building : so two more transepts were added to balance it at either end. So things went on, until a three-storey

building became a six-storey building, and the total area of glass was doubled.

Then there was the lay-out of the grounds. This clearly presented great opportunities, and demanded to be done in style. Paxton got busy. From all over Europe and beyond he acquired rare trees and shrubs. He made fountains worthy of Versailles, lakes, islands, waterfalls, terraces, mazes, groves, temples, lawns. In order to support a water display of 100,000 gallons a minute, Brunel was employed to build two gigantic water-towers, 282 feet high, at either end of the building. A part of the grounds was devoted to educational purposes of a sort. Geological specimens were reconstructed, and a prehistoric swamp was denizened with casts of Brontosaurus and Pterodactyl and many another of the better dead.[1]

Nor was expense spared on the interior of the building. Paxton filled the nave with rare and delicate trees, bought fully-grown at an incredible cost. The side aisles of the building were divided into courts, intended to represent the architecture and sculpture of various epochs. Owen Jones and Digby Wyatt were dispatched on a roving commission over Europe, to acquire casts, models, and drawings. Ferguson and Layard reconstructed an Assyrian court. There were Greek, Roman, Egyptian, Moorish and dozens of other courts. There were many hundreds of plaster casts of statues. Many of the statues from the Great Exhibition remained behind: other people gladly contributed objects too enormous even for their ducal seats. Nothing was too large or too silly for the Crystal Palace; everything was

[1] The completion of these specimens was celebrated by a dinner-party of twenty-two distinguished men of science and letters, which took place in the stomach of the Iguanodon. It is also recorded that an Irish visitor, having drunk himself into a stupor at one of the Temperance Festivals at the Palace, returned to his senses in the early morning on the shores of the Prehistoric Lake, and never drank again.

swept together into the hotchpot to astonish and amuse the masses. Five hundred busts were collected in the gallery ; the works of Baron Marochetti in particular were very well represented. John Ruskin, as the Pope of taste, expressed his admiration of the scheme ; and all the principal authorities of the day lent their assistance to the reproduction of Egyptian mummies and Alhambra fountains and French mediæval tombs.

In the central transept a gigantic organ was built, and a concert platform for 4,000 performers. Here the Hallelujah Chorus resounded yet again when the Queen opened the building on the 10th of June, 1854 ; and Madame Clara Novello's solo performance of the National Anthem was felt to have provided a convincing demonstration of the safety of the building.

But even before the official opening, the Crystal Palace had sailed into troubled waters. Fresh capital had been raised ; that in turn had been exhausted. £1,350,000 had been spent already. The cost of upkeep was prodigious. Shareholders became unpleasant. Paxton was beset by worries and criticisms. He came to live near the new Palace ; and his only son, as Miss Markham observes in a phrase worthy of the Diary of a Nobody, " got into bad company at Sydenham." He became a Member of Parliament, more of a public figure every day ; but every step he took led away from the serene paradise of Chatsworth. He died in 1865, overwhelmed by the strain of leading half a dozen busy lives.

At first the Crystal Palace enjoyed an enormous popularity. In its newest paint, laid out more lavishly than Chatsworth itself, filled with lively and happy crowds, it must have been an enchanting place. For a time it was the most important centre of life in Southern London. Choirs and orchestras of unprecedented size took part in the great Handel festivals. All the great singers held their concerts here.

Spurgeon castigated an appreciative congregation of nearly 24,000 souls. Blondin walked the tight-rope between the two towers, pausing midway to cook and eat an omelette. Generation after generation of the family of Spencer made balloon ascents. Foreigners made the Crystal Palace their first objective : the Shah of Persia was so entranced that he returned again and again to visit it. But with the years the novelty wore off, and the problem of upkeep began. Three-quarters of its usefulness was destroyed by the Lord's Day fanatics, who had it shut on Sundays. In 1866, the north transept was burnt down ; and by then the shareholders were in no mood to build it up again. Towards the close of the century, waning popularity brought bankruptcy steadily nearer. The building was neglected ; it peeled and leaked ; the gardens fell into disorder. Nearly half the land was sold for building estates, and the rest would have gone the same way, if in 1913 the Lord Mayor had not raised the money to purchase the derelict remains for the nation.[1] During the war it was a naval depot, which did it no good ; but in 1920 the trustees began the great task of restoration. In June of that year it was re-opened by the King and Queen ; it was at that time the first home of that migratory bore, the Imperial War Museum. Since then there have been any number of lesser exhibitions. The great Handel festivals were abandoned : but there were concerts and organ recitals, dog-shows and flower-shows and baby-shows. Revivalist meetings thronged its walls ; and Foden's band annually won the brass-band championship on its terrace. Outside there were a dirt-track race course, a boating lake, roundabouts, a maze, a jungle, and a dance

[1] A receiver was appointed in 1909, and the Court of Chancery made an order for the sale of the entire property in 1911, its valuation being then £230,000. This sum was found by the then Lord Plymouth, and the Lord Mayor's Fund was formed to relieve him of the responsibility. The money took over two years to collect.

hall. The grounds were gay once more with statues and rare trees; brontosauri wallowed in restored antediluvian mud; and only in 1935 an eight-ton marble bust of Paxton was gallantly replaced upon the main walk. But the supreme attraction has always been the fireworks, every Thursday night in summer. The firework displays were begun by Mr. Brock in 1865,[1] and grew in excellence and popularity from that day to this. Anyone who has never seen Brock's set piece of "The Battle of Jutland" has wasted his time in London.

The Crystal Palace trustees started with a vast and derelict building, the essence of which was that it depended on constant painting and repairs, and without funds. During their administration about a million visitors a year were attracted, bringing in a little over £80,000 a year. On this income, thanks to the enthusiasm and ability of Sir Henry Buckland, they contrived to save the building and grounds and to put away a considerable reserve. The roof was still being repaired when the end came: the work of painting never ceased. It was an heroic and successful undertaking; but it must be admitted that the result was very odd indeed.

You arrived at the Crystal Palace to find it towering above you like a glass cliff—a noble building, even with its north wing truncated as it was. You entered by a dingy passage beneath the organ. On most occasions, the place was as empty as the tomb. On your left lay the historical courts. One after another, you passed through these strange tawdry reproductions of the hundred and one styles that all came alike to the Victorians. In some of them, masses of aspidistra had been introduced to give a Latin effect, and seemed positively welcome by the mere fact of being, however furtively, alive: in others, workmen were hammering away at nothing in particular, for hammer they never so loudly, the unreality, the impossibility of the place was

[1] Until 1861, the manufacture of fireworks was a criminal offence.

too great to be resolved. In the centre transept stood the huge organ, in front of which, if you chose your day with skill, you might see the handsome figure of Principal Jeffreys immersing his Four-Square Gospellers in a large tank of warm water. Beside this was a little theatre, curtained off, where modest vaudeville shows were given. Beyond were innumerable sculpture courts, filled with the casts that Owen Jones brought back. A few palms and creepers gave variety to the scene. Suddenly you came upon a colony of parrots, who at the sight of a human being would burst into raucous greetings like a group of street-walkers in the small hours. From the galleries hung a series of revolting cartoons left over from some forgotten exhibition. There were refreshment rooms so long deserted as to impose upon the hungry customer the sensation that he was committing an act of awful impiety, as though he were eating food dedicated to the use of a dead Pharaoh, somewhere in King Solomon's Mines. At the end of the south nave, you would be cheered by the sight of Osler's Crystal Fountain, looking very small in a sad pool of goldfish. Downstairs you could recognize casts of Andromeda and the Greek Slave, still captive, but no longer stared at; and so you came out into the gardens, where concrete terraces, crumbled and overgrown, led down to the lawns, the lifeless fountains, to lakes whose banks were dangerous, and plaster buildings whose purpose had been long forgotten.

But the Crystal Palace had been saved from bankruptcy only to perish at the hands of nature. On the 30th of November, 1936, Sir Henry Buckland finished his dinner at about twenty-five past seven and went out to post a letter. Across the road he saw a red glow within the walls of his beloved palace. He ran inside, and saw that a fire had broken out in the administrative offices. Some workmen were attempting to deal with it: but he saw at once that the danger was very grave. There had been fires in the building before now:

but none had obtained such a hold as this. A strong wind was blowing from the north-west, just so as to make the transept into a gigantic funnel, when once the flames should burst through the thin shell of glass at any point. It was only a matter of minutes. Sir Henry Buckland's first act was to warn the members of an orchestra who were practising at the other end of the building : and though they beat a hasty retreat, some of them were too late to save their motor-cars from the flames.

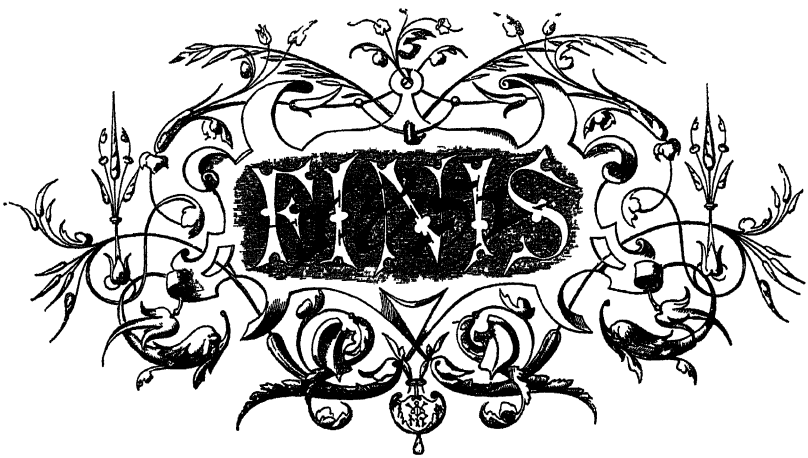
By this time the alarm was spreading. The flame had reached the highest galleries, and was visible for miles around. Fire-brigades were arriving, the first of a total strength of eighty-nine engines ; but the pressure of water was poor, and it was very soon decided that the only attainable object was the saving of the south tower and the low-level railway-station. Shortly after eight o'clock the transept was burning to its full height. Wherever the glass melted or gave way, the flames broke through and upwards like water from a burst pipe. The great iron framework of girders and pillars writhed and twisted like a soul in torment. At twenty-five minutes to nine, the arched roof of the transept fell in, and the flames shot up above it to a height of three hundred feet, and roared into the mouth of the south nave.

There had been beacons on Sydenham Hill before, lit to give warning of a Spanish fleet. All London saw the glow of this tremendous fire, and the fumes were carried a mile or more to the south-east. From the terrace at Westminster, the Lords and Commons watched the rise and fall of the flames. Hampstead Heath was thronged with an awestruck crowd : the people of Brighton, summoned from their homes by a broadcast announcement, flocked upwards to the Devil's Dyke to see the show : the pilot of an air-liner saw from mid-Channel what seemed to be a conflagration of all London. And towards the great pyre itself there trooped a great procession of the people of South

London, drawn by an irresistible horror. They stood in immovable phalanxes the length of all the neighbouring streets : they stood coughing and blinking all down Anerley Hill, overshadowed by the great south tower, which was due to fall at any moment, a fiery brand a hundred yards in length, weighted with a thousand tons of water.

By dawn next morning there was nothing left of the Palace but the two towers and a few burnt-out bays of the northern nave. The rest had fallen through the floor into the deep basement, where it still burned desultorily in a dozen places. Mountains of twisted iron were interspersed with fragments of statuary and automatic machines. The wind occasionally brought down a swinging girder from some surviving balcony. The molten glass had congealed into great blocks and icicles in the gulleys ; while a few whole panes had been blown to the shores of the lake. The grass on the terraces had been baked brown. The birds had been suffocated. Some of the goldfish survived, and had turned black with heat : but the Crystal Fountain itself, scene of innumerable Victorian assignations, stood unharmed amid the monstrous devastation.




BOOKS

APPENDICES

MAY-DAY ODE

But yesterday a naked sod
The dandies sneered from Rotten Row,
And cantered o'er it to and fro :
And see 'tis done !
As though 'twere by a wizard's rod
A blazing arch of lucid glass
Leaps like a fountain from the grass
To meet the sun !

A quiet green but few days since,
With cattle browsing in the shade :
And here are lines of bright arcade
In order raised !
A palace as for fairy Prince,
A rare pavilion, such as man
Saw never since mankind began,
And built and glazed !

A peaceful place it was but now,
And lo ! within its shining streets
A multitude of nations meets ;
A countless throng !
I see beneath the crystal bow,
And Gaul and German, Russ and Turk,
Each with his native handiwork
And busy tongue.

I felt a thrill of love and awe
To mark the different garb of each,
The changing tongue, the various speech
Together blent :
A thrill, methinks, like His who saw
" All people dwelling upon earth
Praising our God with solemn mirth
And one consent."

High Sovereign, in your Royal state,
Captains, and chiefs, and councillors,
Before the lofty palace doors
Are open set,—
Hush! ere you pass the shining gate;
Hush! ere the heaving curtain draws,
And let the Royal pageant pause
A moment yet.

People and prince a silence keep!
Bow coronet and kingly crown,
Helmet and plume, bow lowly down,
The while the priest,
Before the splendid portal step,
(While still the wondrous banquet stays),
From Heaven supreme a blessing prays
Upon the feast.

Then onwards let the triumph march;
Then let the loud artillery roll,
And trumpets ring, and joy-bells toll,
And pass the gate.
Pass underneath the shining arch,
'Neath which the leafy elms are green;
Ascend unto your throne, O Queen!
And take your state.

Behold her in her Royal place;
A gentle lady; and the hand
That sways the sceptre of this land,
How frail and weak!
Soft is the voice, and fair the face:
She breathes amen to prayer and hymn:
No wonder that her eyes are dim,
And pale her cheek.

This moment round her empire's shores
The winds of Austral winter sweep,
And thousands lie in midnight sleep
At rest to-day.
Oh! awful is that crown of yours,
Queen of innumerable realms
Sitting beneath the budding elms
Of English May!

A wondrous sceptre 'tis to bear:
Strange mystery of God which set
Upon her brow yon coronet,—
The foremost crown
Of all the world, on one so fair!
That chose her to it from her birth,
And bade the sons of all the earth
To her bow down.

The representatives of man
Here from the far Antipodes,
And from the subject Indian seas,
In Congress meet;
From Afric and from Hindustan,
From Western continent and isle,
The envoys of her empire pile
Gifts at her feet;

Our brethren cross the Atlantic tides,
Loading the gallant decks which once
Roared a defiance to our guns,
With peaceful store;
Symbol of peace, their vessel rides! [1]
O'er English waves float Star and Stripe,
And firm their friendly anchors gripe
The father shore!

[1] The U.S. frigate *St. Lawrence.*

From Rhine and Danube, Rhone and Seine,
As rivers from their sources gush,
The swelling floods of nations rush,
And seaward pour :
From coast to coast in friendly chain,
With countless ships we bridge the straits,
And angry ocean separates
Europe no more.

From Mississippi and from Nile—
From Baltic, Ganges, Bosphorus,
In England's ark assembled thus
Are friend and guest.
Look down the mighty sunlit aisle,
And see the sumptuous banquet set,
The brotherhood of nations met
Around the feast !

Along the dazzling colonnade,
Far as the straining eye can gaze,
Gleam cross and fountain, bell and vase,
In vistas bright ;
And statues fair of nymph and maid,
And steeds and pards and Amazons,
Writhing and grappling in the bronze,
In endless fight.

To deck the glorious roof and dome,
To make the Queen a canopy,
The peaceful hosts of industry
Their standards bear.
Yon are the works of Brahmin loom ;
On such a web of Persian thread
The desert Arab bows his head
And cries his prayer.

Look yonder where the engines toil :
These England's arms of conquest are,
The trophies of her bloodless war :
Brave weapons these.
Victorious over wave and soil,
With these she sails, she weaves, she tills,
Pierces the everlasting hills
And spans the seas.

The engine roars upon its race,
The shuttle whirrs along the woof,
The people hum from floor to roof,
With Babel tongue.
The fountain in the basin plays,
The chanting organ echoes clear,
An awful chorus 'tis to hear,
A wondrous song !

Swell, organ, swell your trumpet blast,
March, Queen and Royal pageant, march
By splendid aisle and springing arch
Of this fair Hall :
And see ! above the fabric vast,
God's boundless Heaven is bending blue,
God's peaceful sunlight's beaming through,
And shines o'er all.

W. M. THACKERAY.

May, 1851.

MR. MOLONY'S ACCOUNT OF THE CRYSTAL PALACE

With ganial foire
Thransfuse me loyre,
Ye sacred nymphs of Pindus,
The whoile I sing
That wondthrous thing,
The Palace made o' windows!

Say, Paxton, truth,
Thou wondthrous youth,
What sthroke of art celistial,
What power was lint
You to invint
This combineetion cristial.

.

'Tis here that roams,
As well becomes
Her dignitee and stations,
Victoria Great,
And houlds in state
The Congress of the Nations.

Her subjects pours
From distant shores,
Her Injians and Canajians;
And also we,
Her kingdoms three,
Attind with our allagiance.

Here come likewise
Her bould allies,
Both Asian and Europian;
From East and West
They send their best
To fill her Coornucopean.

.

With conscious proide
I stud insoide
And look'd the World's Great Fair in,
Until me sight
Was dazzled quite,
And couldn't see for staring.

.

There's fountains there
And crosses fair;
There's water-gods with urrns;
There's organs three,
To play, d'ye see?
"God save the Queen," by turrns.

There's Statues bright
Of marble white
Of silver and of copper;
And some in zinc,
And some, I think,
That isn't over proper.

.

There's carts and gigs,
And pins for pigs;
There's dibblers and there's harrows,
And ploughs like toys
For little boys,
And elegant wheel-barrows.

For thim genteels
Who ride on wheels,
There's plenty to indulge 'em;
There's Droskys snug
From Paytersbug,
And vayhycles from Bulgium.

.

Amazed I pass
From glass to glass,
Deloighted I survey 'em ;
Fresh wondthers grows
Before me nose
In this sublime Musayum !

.

There's granite flints
That's quite imminse,
There's sacks of coals and fuels,
There's swords and guns,
And soap in tuns,
And Ginger-bread and Jewels.

There's taypots there,
And cannons rare ;
There's coffins filled with roses ;
There's canvass tints,
Teeth insthrumints,
And shuits of clothes by Moses.

There's lashins more
Of things in store,
But thim I don't remimber ;
Nor could disclose
Did I compose
From May time to Novimber.

.

So let us raise
Victoria's praise,
And Albert's proud condition,
That takes his ayse
As he surveys
This Cristial Exhibition.

W. M. THACKERAY.

THE DUKE OF WELLINGTON'S COMMENTS 1850 AND 1851

ONE of the most intimate friends of the Duke of Wellington in his old age was Mary, the second wife of the second Marquis of Salisbury. His almost daily letters to her, which reveal his wit and intelligence in its most natural aspect, have been published by Lady Burghclere under the title of *A Great Man's Friendship* (John Murray 1927). A few extracts which deal with the years 1850 and 1851 are appended.

July 23, 1850

I have seen Paxton, who is the person to be employed in the construction of the great building in Hyde Park for the Exhibition of 1851.

He has given me a plan and a description thereof, which I will send to you. It will be more curious than anything that can be seen in it. It will be constructed of iron and glass.

October, 10, 1850

I suspect we shall have some little Law Suit with a Lady who, strange to say, has, within the last few years Squatted in Hyde Park, as is done in North America, and endeavoured to be done, and is resisted, by Landlords in Ireland; and is the cause of the numberless evictions complained of. I think we shall have to evict this Lady Squatter from Hyde Park. I think that this will be a curious concern.

October 11, 1850

I have another likewise at the Office of Woods about the Squatter in Hyde Park, and I hope to shake that Lady off without very much difficulty. But we must proceed with caution and Regularity.

October 13, 1850

I have heard no more of the Squatter! But I am fully prepared to remove her when I should be required! If you remember there is on the right hand side of what is called the Rotten Row, that is the Riding Road up the Park to Kensington Gardens and Kensington, a Mound or Bank which retains the water in what is called the Serpentine River! This house is placed on this mound, or rather in a Space scooped out of its thickness! for I have never seen the house!

I rather suspect that the Woman had been allowed to establish a sort of stall on this Spot for selling oranges, cakes, etc. It is situated near a fountain, and that she has contrived to build Houses on the spot on which she had been permitted to have a stall for the sale of her oranges and Cakes. However she became established, I entertain no doubt that it will be a troublesome job to remove her! and I have determined that I will go to work regularly.

October 15, 1850

When Sir Harry Smith was in England a year or two ago, he reminded me of my old Practice with the Army.

When there was any difficulty and they came to me to report it, and to ask what they should do, my answer was, "I will get upon my Horse and take a look; and then tell you!" Accordingly, as soon as I shall reach my own House to-morrow, I will get upon my horse and take a look at the position of this Squatter! and I think that I shall have no difficulty in pointing out the mode as settling that one! I shall return here on Thursday after the marriage.

October 17, 1850

I arrived in town prosperously yesterday afternoon; and in conformity with my intention mounted my horse and went to take a look at the position of the Squatter *!*

She is not exactly at the Fountain, very little further on; and higher up the Bank! I entertain no doubt that it will not be difficult to remove her if necessary! But I hope that we shall prevail upon her to move off without the necessity of compulsion.

November 4, 1850

It is very true that it is not very fair to lay upon my shoulders all the unpopularity of the measures for cleaning out the Parks preparatory to the Grand Show in 1851. But I am afraid that it is never unfair to work the willing Horse! I am always ready to go; and therefore I am always in the Harness.

November 15, 1850

I have the pleasure of informing you we have got rid of the Squatter in the Park. She has quitted her Residence, which has been pulled down and the ground on which it stood or rather fell has been levelled.

May 7, 1851

I have been at the Glass Palace again this day at the same hour. Everything in good order, going and returning as well as inside of the Palace. There was no crowd or difficulty of any kind. The shops laid out in a much greater degree. As long as the payments continue at five shillings, I entertain no doubt that there will be no difficulty. The catalogue is useful but I know pretty well where everything is that would be worth looking for. It would be impossible to go over the whole in one view! I was annoyed by the number of people I met there who knew me. One man who shewed me some gold dust at St. Petersburg twenty-five years ago, insisted on shewing me the same article this day. Most of the Russian [exhibit] is still at sea, but there is a good deal from thence.

Whether the Show will ever be of any use to anybody may be questioned, but of this I am certain nothing can be more successful.

May 9, 1851

I shall be prepared with a plan for you to see at the Exhibition what is best worth seeing, whenever you will come. It would take you a fortnight or more to go over the whole. I will watch the effect of the diminution of the price of admission and let you know it. At five shillings there is certainly no inconvenient crowd.

May 15, 1851

I was yesterday, and have been to-day, for a short time, at the Glass Palace. I bought there a piece of the Irish Cambric. But before I quitted the Building, the owner came to me to return the money which I had paid for it, and to say that the sale of any Article exhibited was inconsistent with the rules of the Exhibition. I desired him however to cut me off a pattern of each piece exhibited, which he promised to do, and I will send them to you as soon as I shall receive them. . . .

May 19, 1851

I have paid my daily visit to the Glass Palace. I heard yesterday that it was understood that 100,000 places were secured on the different railroads to

bring people to London on May 26th. This will be besides Season tickets, and foreigners who will land either on the River, or on the Coast. In short from Monday next the crowd will be immense. I saw the Duchess of Gloucester there on Saturday in a wheeled chair and there were others. I do not think that this is necessary for you. It will only be necessary for me to form a plan for you to see what I think will interest you, taking care not to fatigue you. God bless you.

May 20, 1851

I shall be quite ready to receive you, and shew you all that I know deserving your attention in the Glass Palace on Thursday at twelve. I will meet you at the South Entrance of the Transept opposite the Prince's Gate in the Park. Our Rendezvous had better be, as before, near the Glass fountain between the coloured Equestrian Statue of the Queen and that in Marble.

May 25, 1851

You would have been much interested and amused by my being addressed in very good English by an Oriental man while looking at a Statue in the Centre of the building; who made a speech to thank me for the service which I had rendered his Country! for which he said he had long sought for an opportunity. In reply, I complimented him upon the prosperity of his country and its example in the Arts of Peace.

May 26, 1851

I will see whether Friday could suit you. I believe it will be a half-crown day. I did not see anything of the Gentlemen from Oxford on Saturday, nothing extraordinary except the Koh-i-Noor. I do not think that in general I was followed by a larger number than usual.

May 30, 1851

P.S.—Prince Albert has insisted upon all the children at the Schools being sent to see the Glass Palace! which certainly augments the Crowd and is remarkably inconvenient as they move in strings! God bless you.

October 1, 1851

A great deal of interest has been excited about a new telegraph just laid down, of which they sent me a piece of the Cable by which the communication will be conveyed under the sea. It is too heavy to go by post, but I will give it to you when I shall see you. It is very curious. In fact it is a rope made of

Brass wire half the thickness of a little finger. I enclose the letter written to me by one of the officers employed in laying it down!

It is written in the Glass Palace style. Absurd Fools! cannot they see that the French are as sensible as we are, that La Parole a été donnée pour cacher la pensée! They at least were the first to commence the discovery.

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